From: abridle (Alan Bridle)
To: dbacker@bkypsr.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu
Subject: NRAO Large Proposals Committee
Date: Thu, 19 Sep 1996 15:57:46 -0400

Thank you for agreeing to serve on the committee. Paul Vanden Bout has now confirmed our roster of members as:

D.C.Backer (Berkeley)	dbacker@bkypsr.berkeley.edu	510-642-5128
A.H.Bridle (NRA)	abridle@nrao.edu	804-296-0375
E.B.Churchwell (Wisconsin)	churchwell@madraf.astro.wisc.edu	608-262-4909
M.P.Haynes (Cornell)	haynes@astrosun.tn.cornell.edu	607-255-0610
J.N.Hewitt (MIT)	jhewitt@mit.edu	617-253-3071
D.E.Hogg (NRAO)	dhogg@nrao.edu	804-296-0256
K.Y.Lo (Illinois)	kyl@sgr.astro.uiuc.edu	217-333-9381

Paul will send each of you a letter to formalise his charge to the committee, which is:

"I would like the Committee to first consider whether or not the Observatory needs a written, disseminated policy for handling observing projects that require unusually large amounts of observing time on any of our telescopes."

"If so, what is the threshold for large? Should there be anu upper limit to the fraction of observing time at each telescope that could be allocated to large projects? What mechanism should be used to receive and evaluate such proposals, if the normal system is judged to be inappropriate? What, if any, special procedures are needed to evaluate, schedule, supervise, archive, and disseminate the data from, large observing projects?"

"I am hoping the Committee can report by the end of 1996 or in early 1997 at the latest."

As I mentioned when I first contacted you, I hope to minimise the conflict with all our busy schedules by doing as much of the committee's work as possible by E-mail. I will plan to arrange some telephone conferences and (perhaps) one face-to-face meeting when/if it becomes clear that such may be productive. It may be hard to reach closure on some points without such real-time discussion; but I hope that E-mail discussion may let us prepare the ground before any phone conferences or a face-to-face meeting, so that these can be relatively efficient.

I propose that during E-mail discussion, each of us should send every committee-related message directly to all of the others (unless someone strongly prefers that I set up an automated "exploder"). I will keep an archive of all such E-mail, and will leave it up to you whether to do the same individually.

To confirm that I have your correct E-mail address above, could you please reply to this message (just to me, not to the whole group

this time) to let me know that you received it? In doing so, could you also tell me the main times between now and the end of the year at which you can predict that you will not be available by phone or by E-mail (e.g. teaching commitments, travel, etc.)?

I will send another message soon with my suggestions for how we might start answering Paul's questions, and with a "shopping list" of topics that we may need to consider in doing so. In the meantime, if you have any questions or comments about the organisation of the committee, please let me know.

Again, thank you for agreeing to participate in this committee,

Alan B.

From: kyl@astro.uiuc.edu
To: dbacker@bkypsr.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@astro.uiuc.edu, abridle@nrao.edu
Subject: Re: NRAO Large Proposals Committee
Date: Thu, 19 Sep 1996 15:16:22 -0500

alan, got your email, KYL

From: kyl@astro.uiuc.edu
To: abridle@nrao.edu
Cc: kyl@astro.uiuc.edu, sandie@astro.uiuc.edu
Subject: Re: NRAO Large Proposals Committee
Date: Thu, 19 Sep 1996 15:17:51 -0500

Alan,

I will have to let my secretary Sandie tell you when I am available.

KYL

From: sandie@astro.uiuc.edu
To: abridle@nrao.edu
Subject: Re: Dr. Lo's calendar
Date: Thu, 19 Sep 1996 16:43:26 -0500 (CDT)

I don't know how many days this conference would take, but
I will briefly give you an account of times when Dr. Lo
would be available.

The early part of the week of Oct. 7 is available.
He leaves for a trip overseas on the Oct. 15 and returns Oct. 28.
The weeks of Nov. 11-15 and 18-22 are open.
The week of December 2-6 is open but he leaves on Dec. 11th and
will be gone the rest of the month.

I hope this helps with your scheduling.

Sandie Osterbur

From: dbacker@bkypsr2.berkeley.edu (don backer 415 campbell 510-642-5128)
To: abridle@nrao.edu
Subject: Re: NRAO Large Proposals Committee
Date: Thu, 19 Sep 1996 15:24:20 -0700

Alan, My more generic email is dbacker@astro.berkeley.edu. I am reasonably available by email after next week. In Germany 1 Oct to 21 Oct. Probably in Arecibo 30 Nov - 10 Dec; traveling 10 Dec 17 Dec. Don

From: jhewitt@maggie.mit.edu
To: abridle@nrao.edu
Subject: committee
Date: Fri, 20 Sep 96 07:24:09 EDT

Hi Alan - got your email. I teach Tues & Thurs afternoons and I may be away form email Nov 7-9. Oh - I also teach a bit Friday late morning.

Jackie

From: abridle (Alan Bridle)
To: sandie@astro.uiuc.edu
Subject: Re: Dr. Lo's calendar
Date: Fri, 20 Sep 1996 10:00:39 -0400

sandie@astro.uiuc.edu writes:
>
> I don't know how many days this conference would take, but
> I will briefly give you an account of times when Dr. Lo
> would be available.

Thank you for the information. We are basically trying to establish slots that may be available for telephone conferences and possibly one one-day meeting. Does he have e regular teaching schedule that you could outline for me, i.e. times at which we coan predict that he would not be able to participate in phone meetings?

Alan B.

From: abridle (Alan Bridle)
To: dbacker@bkypsr2.berkeley.edu (don backer 415 campbell 510-642-5128)
Subject: Re: NRAO Large Proposals Committee
Date: Fri, 20 Sep 1996 10:04:33 -0400

don backer writes:

> Alan, My more generic email is dbacker@astro.berkeley.edu. I am
> reasonably available by email after next week.

Thanks, Don. I will mention that in my next message to the group.
Have a good trip!

A.

From: abridle (Alan Bridle)
To: jhewitt@maggie.mit.edu
Subject: Re: committee
Date: Fri, 20 Sep 1996 10:08:44 -0400

Thanks for the information, Jackie.

A.

From: abridle (Alan Bridle)
To: jlockman
Subject: Distribution of observing time
Date: Fri, 20 Sep 1996 10:29:29 -0400

Jay,

Re the Large Projects Committee:

One of the first things for it to consider will be: what is "large"?

It might be helpful for it to see what the distribution of observing time per proposal (No. of proposals versus time either applied for, or granted) has historically been for the 140-ft. If you have information like this accessible without too much work, could you pass it on to me? Was any similar information ever compiled for the 300ft?

Thanks,

Alan

From: Martha Haynes <haynes@astrosun.tn.cornell.edu>
To: abridle@nrao.edu
Subject: email
Date: Fri, 20 Sep 1996 10:33:23 -0400

hi alan,
i received your message about the committee.
cheers,
martha

From: sandie@astro.uiuc.edu
To: abridle@nrao.edu
Subject: Re: Dr. Lo's calendar
Date: Fri, 20 Sep 1996 10:23:36 -0500 (CDT)

Dr. Lo is not teaching this semester. We have a weekly colloquium on Tuesday from 4:00pm - 5:00pm. He usually has a weekly meeting with his Administrative Assistant on Friday at 11:00 am to noon. He prefers to keep Wednesday open if possible without scheduled appointments. He also attends a colloquium in Physics on Thursday from 4:00pm - 5:00pm. These are the only weekly commitments that remain on his calendar each week.

I hope this helps with your scheduling.

Sandie Osterbur

From: abridle (Alan Bridle)
To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu
Subject: NRAO Large Proposals Committee: questions
Date: Fri, 20 Sep 1996 15:17:00 -0400

1. First question
==========

I suggest that we start by thinking about one question, as what follows will depend on how we answer it. It is:

"Is there a level of observing time (or other resources) at which we should consider treating an observing proposal differently than usual?"

Our answer will decide how we will interpret Paul's term "unusually large" in what follows, or indeed whether _anything_ follows.

- one perspective is that there need not be any "large project" threshold, i.e. that the NRAO need only clarify that there is no upper limit to the length of time that can be requested via the normal proposal process. (I believe no formal upper limit has ever been given, but there has been a _perception_ that "a few days" was a de facto upper limit at the VLA before the 21cm surveys. The 300-ft rather obviously had no specified upper limit.)

- another is to draw a line somewhere, probably not the same for all telescopes, or at all times for any one telescope, and treat large proposals differently, for reasons that include:

  - "surveys" provide databases that are used by a wide community, increasing the need for consensus about their scope, selection parameters, data reduction methods, archiving and dissemination schemes, relative to other proposals.

  - big projects should generate big proposals that will require more careful scrutiny by bigger, specially constituted, refereeing panels.

  - big projects impact other users severely, so additional supervision is needed to ensure that data are processed adequately and on time, and that the observing procedures maintain data quality appropriately.

  - rather than accepting large proposals at any of the usual deadlines, the NRAO might have specific "Announcements of Opportunity" for large projects on each instrument, to clarify when such proposals are welcome, and to regulate the total time assigned to them.

What do you see as the critical issues that will decide your answer to this first question?

Is there background information that you need to help you answer it?
(I am trying to obtain the distributions of observing time
historically assigned to individual proposals on the various
telescopes. This info is readily available for the VLA thanks to
Barry Clark's system, less readily for the others. The statistics
will not account for the fact that some long projects are now done via
multiple (consecutive) proposals: e.g. a pilot proposal, a "first
pass", then extensive follow-ups as a study proves fruitful.)

2. "Heads up" on other questions
==========

Although I propose to focus discussion on question #1 initially,
I would also like to anticipate what issues may need our attention if
we decide that there is a threshold above which new procedures are
called for. My "shopping list" of potential further issues
includes:

A. Should there be an upper limit to the % of time at each
telescope that could be allocated to "large projects"?

If "yes",

- o what?
- o with what duty cycle (i.e. averaged over what time, with what upper limits in any block of observing time, LST etc.)?
- o if we establish an upper limit, how should it be applied?
  - by making large projects re-compete for their time against others once they have started?
  - by guaranteeing large project, once started, their share up to that limit?
- o must it also be clear that _no_ lower limit exists? (i.e., if there was an AO for "surveys" on a telescope, t at this would not guarantee that some proposal gets time).

B. What is the preferred mechanism for receiving large project proposals?

- o in the regular proposal queue, at the regular deadlines?
- o at any time?
- o in response to specific Announcements of Opportunity?
- o something else?

C. What, if any, special procedures are needed to evaluate,
schedule, and supervise large project proposals?

- o broader refereeing
  - more detailed proposals?
  - ad hoc panels for each proposal?
- o referees' reports to a standing Large Proposals Committee, to the Director, or to the usual Telescope Schedulers?
- o should demonstration (pilot) projects always be required

to prove observing techniques and data-handling capabilities?
- o should the NRAO play any role in forming consortia around large proposals once they have submitted, e.g. to add expertise or data-processing capability not part of original proposal?
- o should large project supervision be "weak" (merely suggestions from an advisory panel to the project) or "strong" (panel could in effect re-referee the project while in progress and recommend no further time allocation)?
- o rapid placement of data in public domain?
  - should all such projects be done as "service to community", with immediate community access to data once calibrated?
  - how should public domain data be standardised (stage of processing, format, access to processing histories, etc.) and how should such standards be set and monitored?
- o interaction with smaller proposals in the regular queue
  - do we need criteria for when smaller proposals should be embargoed because their results would be pre-empted by, or replicated by, a planned large project?

I welcome your thoughts on what else should be on this list if we do decide that special policies are needed. Equally, please say if you think that some of these issues should not be pursued here.

3. Community input to our discussion
==========

Finally, I would like to ask you for your views on if/when and how we should solicit input on these issues from the NRAO community at large.

Please reply to this message in parallel to all of the other committee members. The addresses in my first message appear to have worked, but Don Backer suggests that we use the more generic version of his E-mail address: dbacker@avtro.berkeley.edu

Thanks in advance,

Alan B.

From: churchwell@madraf.astro.wisc.edu
To: abridle@nrao.edu
Subject: RE: NRAO Large Proposals Committee
Date: Fri, 20 Sep 1996 15:14:29 EDT

Allan,

I got your email. Sorry for the delay in responding.

Cheers, Ed

From: abridle (Alan Bridle)
To: jvangork@dido.phys.columbia.edu
Subject: Large Proposals
Date: Fri, 20 Sep 1996 17:21:50 -0400

Hi Jacqueline,

This is to let you know that Paul Vanden Bout has formed a committee to advise him about policies for managing future large projects on the NRAO telescopes. I am chairing it, and the members are: Don Backer, Ed Churchwell, Martha Haynes, Jackie Hewitt, Dave Hogg, and Fred Lo.

One of the first issues we are considering is whether there is a threshold of observing time requests above which some special proposal procedure should exist, and what that threshold should be. As background to that, I am gathering some information about the present statistics of VLA proposals.

The statistics do not, of course give any measure of time that has been awared to projects via incremental (consecutive) proposals. I know of one 200-hr proposal that was basically awarded in 3 steps through the regular proposal route. (I am not suggesting that there is anything wrong with this, by the way).

I was wondering if you might have had a few proposals that fall into this category, e.g. where you did some sort of pilot project first, or got less than you asked for first time round but then were able to demonstrate that a much bigger allocation was appropriate, using some tantalising results? In any case, my question is, have you already had >=100-hr proposals run at the VLA but broken up in ways that might not be reflected in Barry's project-code statistics?

I don't propose to identify any individual cases to the committee, I'm just gathering a bit of background to indicate where the practical "upper limits" of the normal proposal process have been set. I know you have a strong interest in these issues (!) so thought you might be able to give me an example or two.

On another point that came up at the Users' Meeting, there is a slight truce between Eric and Gustaaf at the moment because they have been doing an HI project together, but most of the tensions between CVX, AOC-AIPS, and aips++ remain. Paul is still hoping that the solution will find itself, and encouraged Gustaaf to make an extended trip to C'ville to help it along, but there are still some folks who are very dug in and Eric is still not formally part of the AIPS group. I'm afraid the messages from the Users' Committee on this were too mixed for Paul to acquire much of a vector sum from them.

The VLA upgrade design is going on reasonably o.k., very much limited by engineering manpower however. There are interesting possibilities in the wide-band feed department being motivated by the AT experience, and increasing thought being given to doing both L and S bands with one feed and the present subreflector, preserving access to the prime focus by swinging the subreflector away.

There will also be a proposal to the NSF to make use of the existing, dark, optical fiber between the VLA and Pie Town for some demonstration projects.

Cheers,

A.

From: abridle (Alan Bridle)
To: jvangork@astro.columbia.edu (Jacqueline VanGorkom)
Date: Sat, 21 Sep 1996 07:32:22 -0400

Jacqueline VanGorkom writes:
> Hi Alan, I don't know how much statistics you need.. I just realized my other
> current project Abell 2670 is another case.
> If you wish I could produce a list of project codes that have received
> more than 100 hours, or 200 hours..

If it's not a huge pain to do, it would be useful to know the
total times you got for each of the ones that was >200 hrs.
I won't need project codes for anything, I don't intend to
associate times with names in anything I would use this for,
though cognoscenti will likely be able to guess who the big
projects came from!

> Ironically in almost all cases in the last 5 years, these proposals had
> to go through at least 2 rounds, because of 1 referee.. who is now in
> your committee.

Oops.

I'll keep in touch as this unfolds, and will welcome any advice you
can give us. Our first question is where to set any threshold for
considering proposals differently than in the normal stream.

Also, an issue that has not been raised yet in the committee (it
was only formed this week) but which has had a lot of discussion
in the hall here in C'ville is whether a survey project, e.g. an
HI survey, might usefully be done as part of a dynamic scheduling
strategy for GBT. I.e. as a default low-frequency program if
weather or equipment problems preclude high-frequency work. One
suggestion has been that the community be invited to put together
a consortium to specify how such a survey might be done as a
"service project". Any thoughts on whether that sort of approach
would be viable?

Cheers, A.

From: jvangork@astro.columbia.edu (Jacqueline VanGorkom)
To: abridle@nrao.edu
Date: Sat, 21 Sep 1996 20:40:53 -0400

Hi Alan, here comes some more about surveys

1) it seems that an appropriate length to get a special review is about 1000 hours. (as I recall this was the number we came up with in the user committee).

   This is an amount of time that actually will have a major impact on other users and thus needs to be scrutinized much more careful.

   examples in case.. The B array survey killed everybody who wanted to observe in that specific LST range.
   the D array killed everybody who wanted D array night time,
   ie to do 20 cm detection experiments (ie me)

   Having 2 surveys going at the same time seems like a bad idea.

   I have become convinced that surveys are scientifically probably one of the best ways to spend time. It's their nonlinear impact on all other science that bothers me. You could also think of setting an upper limit to the time that a given NRAO instrument can spend per year doing surveys.

2) I think survey time should only be given on the condition that the data are public as soon as they are taken.

3) I don't think anything special need to be said about just big projects. There is a natural cutoff, how much can a person do in a reasonable amount of time. So I suspect you just don't get any proposals between 100-250 hours and real big.
   I have had 6 students do a thesis with VLA (combined with other things), as it turns out, all got between 100 and 200 hours.
   My own projects also often finish up in the zone between 100 and 200 hours. For theses a good strategy is to write a proposal for the entire project, ie we are going to ask for 270 hours and then also mention how you intend to split it up.. ie 2 or 3 configuration cycles. You then write updates on how it is going and the proposal gets reviewed anew every cycle.

4) Personally I think it would be good if the VLA did more of those intermediate size projects, but apparently there is no consensus among referees about what is a real bad proposal. This is why they continue to schedule lots of small, mediocre, projects.

5) I am intrigued by your dynamic scheduling project. Of course this is not only an issue for the GBT, last week a bunch of Japanese were observing CO at redshift of 4 at the VLA, in hail with RECORD size hail stones.
   Thus, high frequencies at the VLA are just as much a problem.
   I think it would be great to formulate some back up projects.
   Consortia may be good to define the project. Then it would probably be

best, if NRAO does it, calibrates it and puts it on the WEB,
similar to the Hubble Deep Field.
With the GBT I suppose you are both thinking about galactic HI and
the GBT as redshift machine (the Giovanelli Haynes stuff)? I must
admit that I am not sure how interesting it is to do more of it.
Clearly the GBT will only be of very limited interest for higher
redshift stuff, since it's angular resolution is so poor. The alternative
would be to make a call for proposals for filler time and select the
most interesting proposal. To me that sounds more interesting actually,
big consortia don't necessarily imply big ideas.
For the VLA, both optically unbiased HI surveys, and real deep integrations
would be a very interesting option for filler time. I am sure lots of
people can come up with good ideas.

If it's a group of people doing it rather than NRAO, the data should still
become public soon.. maybe 6 months?
Anyway, I really like the idea to find good use for otherwise wasted time.

here I give a list of some projects I know of, with approximate time.
Interestingly (but not surprisingly) projects seem to get bigger with time.
That must reflect the better software and increased computer power.

theses:
mid eighties
HI survey of Virgo.. 90 hours
edge on spirals 90 hours

early nineties
HI survey Hydra 126 hours
fate of gas in mergers 225 hours
optically unbiased HI surveys 200 hours
(voids, superclusters + comparison sample)
shape of dark halos 40 hours (he used his brains instead of telescopes)
HI in shell galaxies 100? hours

some of my recent own
HI environment of nearby Ly alpha absorbers 110 hours
Abel 2670 160 hours

Of these edge on spirals, Hydra, fate of gas in mergers and Abell 2670 were
submitted asking for the total time upfront. Time was then allocated piece
meal.

Good luck with the committee. It sounds like a good opportunity to make sure
that some good science comes out of these telescopes.

Jacqueline

From: abridle (Alan Bridle)
To: Barry Clark <bclark@aoc.nrao.edu>
Subject: Re: Distribution of observing time requests
Date: Mon, 23 Sep 1996 09:59:41 -0400

Barry, I gather from Jim C. that the NVSS total time allocation was about 2500 hrs. Could you tell me the comparable numbers for FIRST (the approved part) and Rodriguez' big VLA project?

Thanks, A.

From: Barry Clark <bclark@aoc.nrao.edu>
To: abridle@nrao.edu
Subject: Re: Distribution of observing time requests
Date: Mon, 23 Sep 1996 08:02:17 -0600 (MDT)

Oops. When I made up those numbers for you, I absentmindedly left on a switch that rejected things scheduled or rejected before Jan 1, 94, so that's two years data, not six, and has a small bias against reporting rejected (0 time) proposals. I'll have a look at the VLBA statistics today or tomorrow, and may even get the 6 yr statistics for the VLA.

From: abridle (Alan Bridle)
To: jvangork@astro.columbia.edu (Jacqueline VanGorkom)
Subject: surveys and committees
Date: Mon, 23 Sep 1996 10:45:34 -0400

Thanks for all the thoughts and info re "surveys". I agree that there must be an upper limit to the total time any telescope spends on them and that the two-survey mode of the VLA was stretching things pretty badly. In general, the upper limit might change with time according to the proposal pressure on a telescope, however. (As an extreme, right now Jay is _encouraging_ long projects on the 140-foot to minimize changeover work that is done there while the operations staff concentrate on GBT tasks.)

I certainly take the point about resolution being needed for deeper HI surveys. The other candidates for the GBT (worked quite well at Arecibo) are pulsar surveys.

Personally, I'm inclined to set the threshold for "big" around 500 hrs but to avoid special calls (like NASA-style AO's) for "large" proposals; I'd like simply to clarify that large projects can be proposed at any time during the normal proposal process, but that at some scale of time requested they will be refereed more thoroughly and be subject to ongoing supervision and to data-accessibility requirements. Also that all such proposals have to fit under an overall "cap" of observing time that can be dedicated to big projects.

There seems to be general agreement that the ongoing supervision of both VLA continuum survey projects was necessary and useful. I also think it is important to distinguish the refereeing and supervision stages: the refereeing should include some people who can be expected to be skeptical, while the supervision should be done by "experts" in the arena of the survey (who we can presumably expect to be enthusiastic that it is being done and thus differently critical than a refereeing panel!). That's enough extra structure to require setting some sort of threshold for treating bigger projects differently.

Re the Users' Committee, yes I saw the report in the end (though it has not been generally circulated) and felt that the report shot itself in the foot by not focusing well enough. It has been a particularly easy one for Paul to dismiss, unfortunately. It may also persuade him to draw the distinctions between the Users' Committee and the Visiting Committee more clearly. At the AD level there was also some annoyance that some items appeared only in the report and were not brought up during the meeting. I still feel that the committee should be encouraged to caucus as a committee the afternoon/evening before the meeting so it has more time to get its own priorities straight before the joint sessions. But the trend has been this way for a decade now and nothing ever seems to change it much ....

Again, thanks for the info, and I will let you know how things are developing re the "large proposals" committee.

Cheers, A.

From: Barry Clark <bclark@aoc.nrao.edu>
To: abridle@aoc.nrao.edu
Cc: bclark@aoc.nrao.edu
Subject: Scheduling statistics
Date: Mon, 23 Sep 1996 12:41:33 -0600 (MDT)

Six years beginning 90jan01

Time sched	#prop VLA	#prop VLBA
Total	2661	782
Scheduled	1944	411
> 1h	1930	411
> 1,5h	1915	411
>2h	1876	411
>3h	1805	409
>4h	1711	407
>6h	1500	399
>8h	1266	381
>12h	871	298
>16h	618	236
>24h	307	126
>36h	131	80
>48h	70	49
>72h	29	26
>96h	9	12
>144h	4	6

The large VLA proposals are:
AU 51, 160h, Uson, Zeldovich pancakes
AR277, 360h, Rodriguez, Proplids
AB628, 1126h, Becker, FIRST (so far, at least 480h more to go)
AC308, 2165h, Condon, NVSS (a little more to go, to cover interference, etc)

The large VLBA proposals are:
BC 19, 192h, Clark, NASA geodetic program for 1993
BL 2, 231h, Lestrade, Stellar astrometry for HIPPARCOS tie-in
BB 9, 240h, Baath, Use of recorders at KP, OV for mm VLBI
BB 23, 240h, Beasley, Astrometric survey of strong Merlin calibrators
BC 40, 275h, Clark, NASA geodetic program for 1995
BC 37, 370h, Clark, NASA geodetic program for 1994
(BC 23 is still active, shooting for 336h)

From VM Mon Oct 7 16:35:59 1996
X-VM-v5-Data: ([nil nil nil nil nil nil nil nil nil]
["515" "Mon" "7" "October" "1996" "16:32:00" "-0400" "Alan Bridle" "abridle" nil "17" "NRAO
Large Proposals Committee: NRAO Newsletter" "^From:" nil nil "10" nil nil nil nil]
nil)
Content-Length: 515
Received: by polaris.cv.nrao.edu (AIX 3.2/UCB 5.64/4.07)
id AA50911; Mon, 7 Oct 1996 16:32:00 -0400
Message-Id: <9610072032.AA50911@polaris.cv.nrao.edu>
From: abridle (Alan Bridle)
To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu
Subject: NRAO Large Proposals Committee: NRAO Newsletter
Date: Mon, 7 Oct 1996 16:32:00 -0400

The deadline for the October NRAO Newsletter is imminent, and I think
it will be useful to include a brief item noting the membership and
charge of our committee, and inviting users to send me their comments
on the questions in the charge.

I will draft this item unless anyone on the committee voices a strong
objection by noon EDT Wednesday (9th.)

As I have not yet heard from anyone re my first question I will follow
it with my own answer later this week, to get our discussion going!

Regards, Alan B.

From: "David Hogg" <dhogg@NRAO.EDU>
To: abridle@nrao.edu (Alan Bridle)
Cc: dhogg@polaris.cv.nrao.edu (David Hogg)
Subject: Re: NRAO Large Proposals Committee: NRAO Newsletter
Date: Mon, 7 Oct 1996 16:59:57 -0400 (EDT)

Alan -
It is fine with me to have an item in the newsletter such
as you suggest.

I do indeed owe you a note. I will try to get you something
before I go to GB Wednesday.

Dave

From: abridle (Alan Bridle)
To: pvandenb
Subject: Newsletter - Large Proposals Committee
Date: Tue, 8 Oct 1996 10:49:51 -0400

Paul,

I have drafted this item for the October NRAO newsletter. Let me know if there is anything you would wish to see added/changed.

Alan

==========

LARGE PROPOSALS COMMITTEE

The large scale surveys currently in progress at the VLA have raised a number of issues. Paul Vanden Bout has recently appointed a committee to consider whether or not the Observatory needs a written, disseminated policy for handling observing projects that require unusually large amounts of observing time on any of the NRAO telescopes. If so, the committee will also consider the following questions. What is the threshold for large? Should there be any upper limit to the fraction of observing time at each telescope that could be allocated to large projects? What mechanism should be used to receive and evaluate such proposals, if the normal system is judged to be inappropriate? What, if any, special procedures are needed to evaluate, schedule, supervise, archive and disseminate the data from large observing projects?

The committee members are Donald C. Backer (Berkeley), Alan H. Bridle (NRAO, Chair), Edward B. Churchwell (Wisconsin), Martha P. Haynes (Cornell), Jacqueline N. Hewitt (MIT), David E. Hogg (NRAO) and K.Y. (Fred) Lo (Illinois).

All users of NRAO telescopes are welcome to express their views on these questions, or others related to the handling of unusually large projects at the telescopes, by contacting any of the committee members. It will however be particularly helpful if any written comments on these issues are sent by E-mail to abridle@nrao.edu before mid-November.

A.H.Bridle

From: pvandenb@NRAO.EDU (Paul Vanden Bout)
To: abridle@NRAO.EDU (Alan Bridle)
Subject: Re: Newsletter - Large Proposals Committee
Date: Tue, 8 Oct 96 13:24:42 EDT

Alan Bridle writes:
>
> Paul,
>
> I have drafted this item for the October NRAO newsletter. Let
> me know if there is anything you would wish to see added/changed.
>
> Alan
>
> ==========
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> LARGE PROPOSALS COMMITTEE
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> mid-November.
>
> A.H.Bridle
>

Looks good to me. Carolyn could use it ASAP. Thanks. PVB

From: abridle (Alan Bridle)
To: cwhite, bturner
Subject: Newsletter item - Large Proposals Committee
Date: Tue, 8 Oct 1996 14:40:22 -0400

LARGE PROPOSALS COMMITTEE

The large scale surveys currently in progress at the VLA have raised a number of issues. Paul Vanden Bout has recently appointed a committee to consider whether or not the Observatory needs a written, disseminated policy for handling observing projects that require unusually large amounts of observing time on any of the NRAO telescopes. If so, the committee will also consider the following questions. What is the threshold for large? Should there be any upper limit to the fraction of observing time at each telescope that could be allocated to large projects? What m chanism should be used to receive and evaluate such proposals, if the normal system is judged to be inappropriate? What, if any, special procedures are needed to evaluate, schedule, supervise, archive and disseminate the data from large observing projects?

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A.H.Bridle

From: "David Hogg" <dhogg@polaris.cv.nrao.edu>
To: abridle@polaris.cv.nrao.edu (Alan Bridle)
Cc: dbacker@astron.Berkeley.EDU, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu,
kyl@sgr.astro.uiuc.edu, dhogg@polaris.cv.nrao.edu (David Hogg)
Subject: My thoughts on your questions
Date: Tue, 8 Oct 1996 11:47:26 -0400 (EDT)

Alan:

I answer yes to your first question:

"Is there a level of observing time (or other resources) at which we should consider treating an observing proposal differently than usual?"

There has always been an interest in large-scale observing projects. In the past many of these projects were undertaken at university facilities (Berkeley, Massachusetts, and Michigan come to mind immediately) because such facilities could be optimized to do the specific job, and then not changed during the course of the project. Recently however the demands of the science have required that certain of the surveys be done on the telescopes of the national facilities, primarily for reasons of sensitivity. I think specifically of the pulsar work and the extragalactic HI work at Arecibo, the two VLA continuum surveys, and the galactic plane study at Penticton.

I believe that there will continue to be pressure for large projects on NRAO instruments. There has been interest expressed in the 12-meter telescope, and it is easy to imagine projects on the VLBA and the GBT that would require a significant fraction of the observing time. I believe therefore that the NRAO should be prepared to consider requests of this type.

In your note you listed four considerations which might drive us to treat large proposals in a manner that is different from the usual short proposals. In my view two of these reasons are compelling:

1. Big projects impact other users severely. It is clear that the VLA surveys have had a noticeable affect on the number of 'standard' proposals which were scheduled over the last three years, at least in the configurations employed by the surveys. I feel that the users have been both patient and understanding in this circumstance, because they feel that the surveys are scientifically very important, that they could only have been done with the VLA, and that the pain is of finite duration. The NRAO must be able to assure their users that any other similar large project will also meet the tests of scientific importance, uniqueness, and finite length.

2. Big projects in general push the limits of the instrumentation in sensitivity and rate of data. The NRAO should be in a position to forge the consensus about the parameters of the survey and data analysis as you suggested in your note.

I do not have an opinion as yet about what the cutoff level should be. In a way, I feel like the Justice who said that he could not define 'it', but would know 'it' if he saw 'it'. I expect that the criteria might differ from

telescope to telescope. I would hope that this committee could develop general guidelines and/or principles, but leave some flexibility with the NRAO Director in the disposition of each specific request.

I have not thought extensively about the follow-up questions, since they might be moot. However, the considerations above which persuaded me of the need for a procedure to handle large observing requests imply that the answers to the two most important of your questions are:

1. We probably need broader refereeing. I favor an ad hoc panel.

2. We probably need some kind of standing committee which would review the technical aspects of the proposal as it was scheduled, and would be able to assure the community that the data would be available in an acceptable form in a timely manner.

Finally, I am opposed to Announcements of Opportunity. I would prefer to wait for scientists who are driven by their personal interest in a problem to take the initiative of proposing the large project.

Regards,

Dave

From VM Wed Oct 9 08:29:34 1996
X-VM-v5-Data: ([nil nil nil nil t nil nil nil nil]
["253" "Tue" "8" "October" "1996" "21:51:44" "-0700" "don backer"
"dbacker@bkypsr2.berkeley.edu" "<199610090451.VAA10793@bkypsr2.Berkeley.EDU>" "4" "Re:
NRAO Large Proposals Committee: NRAO Newsletter" "^From:" nil nil "10" nil nil nil nil]
nil)
Content-Length: 253
Received: from cv3.cv.nrao.edu by polaris.cv.nrao.edu (AIX 3.2/UCB 5.64/4.07)
id AA45714; Wed, 9 Oct 1996 00:53:00 -0400
Received: from tarsier.cv.nrao.edu (root@tarsier.cv.nrao.edu [192.33.115.50]) by
cv3.cv.nrao.edu (8.8.0/8.8.0/CV-2.1) with ESMTP id AAA21597 for <abridle@nrao.edu>; Wed, 9
Oct 1996 00:52:59 -0400 (EDT)
Received: from nak.berkeley.edu (nak.Berkeley.EDU [128.32.206.21]) by tarsier.cv.nrao.edu
(8.8.0/$Revision: 2.10 $) with ESMTP id AAA30137; Wed, 9 Oct 1996 00:52:57 -0400
Received: from bkypsr2.Berkeley.EDU (bkypsr2.Berkeley.EDU [128.32.92.52]) by
nak.berkeley.edu (8.7.3/8.6.10) with SMTP id VAA19553 for <abridle@nrao.edu>; Tue, 8 Oct
1996 21:51:36 -0700 (PDT)
Received: by bkypsr2.Berkeley.EDU (SMI-8.6/SMI-SVR4)
id VAA10793; Tue, 8 Oct 1996 21:51:44 -0700
Message-Id: <199610090451.VAA10793@bkypsr2.Berkeley.EDU>
From: dbacker@bkypsr2.berkeley.edu (don backer 415 campbell 510-642-5128)
To: abridle@nrao.edu
Subject: Re: NRAO Large Proposals Committee: NRAO Newsletter
Date: Tue, 8 Oct 1996 21:51:44 -0700

Alan, As I stated I have been "at work" here in Germany and have
not had time to review your earlier msg. I just read Dave Hogg's
response, and certainly concur with last paragraph about no
AO. I'll try to make some comments by week's end. Don in Bonn.

From: abridle (Alan Bridle)
To: dbacker@bkypsr2.berkeley.edu (don backer 415 campbell 510-642-5128)
Subject: Re: NRAO Large Proposals Committee: NRAO Newsletter
Date: Wed, 9 Oct 1996 08:31:42 -0400

don backer writes:

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> not had time to review your earlier msg. I just read Dave Hogg's
> response, and certainly concur with last paragraph about no
> AO. I'll try to make some comments by week's end. Don in Bonn.

Thanks, Don.

A.

From: abridle (Alan Bridle)
To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu
Subject: NRAO Large Proposal Committee - my views on first question
Date: Wed, 9 Oct 1996 17:08:55 -0400

Q. "Is there a level of observing time (or other resources) at which we should consider treating an observing proposal differently than usual?"

Like Dave Hogg, I say "yes", because:

Some combinations of angular resolution, sensitivity, sky and frequency coverage (and for VLBI, operational availability) exist only on NRAO-operated telescopes. So I agree that these telescopes should be usable for "surveys" whose importance is agreed to by a broad segment of the astronomical community. But projects that need many hundreds of hours of time impact the work of many other astronomers when done at a national facility. So there is also a need to strike a _widely-acceptable_ balance between such studies and normal-sized projects.

I do not see how to measure the breadth of support for large proposals, or to satisfy the user community that their observing parameters have been optimized, without having a threshold above which proposals get extra scrutiny initially. (And to answer Paul Vanden Bout's specific question about a written, disseminated policy: if such thresholds are set, I see no reason not to publicize them.)

Furthermore, if a big community's observing time is "taxed" to make room for large projects, then that community should share the benefits of the final database quickly. This implies _ongoing_ extra scrutiny for such projects, aimed at ensuring timely general access to calibrated data whose quality are uniform and well-understood. Again, this asks for different treatment above some threshold level.

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If there is anyone on the committee who will say "no" to the initial question at this point, I'd like to hear from you as soon as possible, so we can focus on that issue soon.

But if your answer will be "yes", could you also think about where to set a threshold level for different treatment, and why? (A second message will follow to stir this pot!)
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Alan B.

From: abridle (Alan Bridle)
To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu
Subject: NRAO Large Projects Committee: steps to thresholds
Date: Wed, 9 Oct 1996 17:10:27 -0400

Here are some ways in which I think large projects might be treated differently than usual:

1. The big impact on other users of the telescopes makes it more important to have "skeptical reviewing" of large proposals. I use the word "skeptical" to imply that some reviewers would be drawn from outside the sub-discipline that benefits most from the proposed project. Initially, we should try to see whether a large proposal can win support from "skeptical referees". To do so, we would need a threshold above which proposals go to a bigger, and broader, initial refereeing panel than usual, including astronomers whose work will not directly benefit from the final database.

2. The impact on other users also requires us to ensure that the observing techniques and time allocations for large proposals are optimized both to the science and to the instrument. So a large proposal with favorable "skeptical reviews" should next be assessed by a panel comprised of experts on its astrophysical goals and on the instrument. This panel might require a pilot/demo project. It might also consider whether the proposal is appropriate for use in a dynamic scheduling strategy (see below). Unlike the initial panel, the second panel could include NRAO scientists and operations staff, and could meet directly with the proposers, in a "workshop" format.

3. Scheduling large proposals may severely constrain other use of the telescope at some LSTs or epochs. We have to balance optimizing a large proposal for its own efficiency against the disruption of all other observing. This balance may be as simple as setting its "duty cycle" so that it stays within agreed "large project" upper limits for the instrument. Or it may involve using a lower-frequency survey proposal as part of a "dynamic scheduling" strategy for a telescope (e.g., GBT) with both high and low-frequency capability. In either case, special scheduling considerations (and upper-limit guidelines) may be needed. (I would leave discussing such guidelines for later; I want here simply to identify a step in the process, not to spell out criteria for it). I see this as a job for the usual schedulers, based on the recommendations from the first two review panels.

4. An ad hoc expert panel should also monitor the quality and speed of the data analysis, and the arrangements for archiving the calibrated data. This panel should exist for the lifetime of the project. It should be able to recommend withholding later instalments of observing time if the project does not meet data-quality targets in a timely fashion, or if the data do not become publicly available on an agreed schedule. It would mainly review "off-line" performance of the project rather than the "on-line" strategy, but some continuity of membership with panel #2 would be advisable.

So I suggest we may need guidelines and thresholds for at least the following:

- o "Skeptical reviewing"
- o "Expert advice"
- o "Special Scheduling"
- o "Expert monitoring" of progress and data handling.

I favor a threshold for skeptical reviewing that would be a little below what might be appropriate for the later steps. For example, an initial review could recommend increasing the time request if an otherwise strong proposal was too "optimistic" about dwell times or calibration time, or if there was a widespread opinion that a larger sample was appropriate.

I suggest that the "skeptical review" threshold might be near 2 weeks' observing, or about 300 hours. (For the VLA and VLBA, this would have affected two or three projects other than the two 20-cm surveys, according to statistics that Barry Clark has provided.) The initial reviewers could be asked to assess whether good proposals for between 300 and, say, 1000 hrs should be subjected to all the later steps. For still larger proposals, the extra steps could become mandatory.

Wherever thresholds are set, some proposals might be tailored to avoid them (e.g. asking for 299 hrs under the above guideline!); allowing some discretion between the initial and later reviews, as well as for the usual NRAO Directorial discretion, might deal with this?

I share Dave Hogg's negative view about specific Announcements of Opportunity for large proposals. I do not see how they would help us to tackle any of the above issues in proportion to having encouraged the whole community to think about large proposals simultaneously! As the NRAO-operated telescopes are ground-based and flexible in their capabilities, I am not sure what would be gained by separating large proposals from the rest of the regular process via an AO approach. I would rather set a threshold for increased "skeptical refereeing" as part of the normal NRAO proposal mechanism, and make this the gateway to other stages of review as needed. Does anyone on the committee have arguments in favor of the AO-based approach?

Regards,

Alan B.

From: abridle (Alan Bridle)
To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu
Subject: NRAO Large Proposals Committee - VLA/VLBA statistics
Date: Wed, 9 Oct 1996 17:18:04 -0400

------- start of forwarded message (RFC 934 encapsulation) -------

From: Barry Clark <bclark@aoc.nrao.edu>
To: abridle@aoc.nrao.edu
Cc: bclark@aoc.nrao.edu
Subject: Scheduling statistics
Date: Mon, 23 Sep 1996 12:41:33 -0600 (MDT)

Six years beginning 90jan01

Time sched	#prop VLA	#prop VLBA
Total	2661	782
Scheduled	1944	411
> 1h	1930	411
> 1,5h	1915	411
>2h	1876	411
>3h	1805	409
>4h	1711	407
>6h	1500	399
>8h	1266	381
>12h	871	298
>16h	618	236
>24h	307	126
>36h	131	80
>48h	70	49
>72h	29	26
>96h	9	12
>144h	4	6

The large VLA proposals are:
AU 51, 160h, Uson, Zeldovich pancakes
AR277, 360h, Rodriguez, Proplids
AB628, 1126h, Becker, FIRST (so far, at least 480h more to go)
AC308, 2165h, Condon, NVSS (a little more to go, to cover interference, etc)

The large VLBA proposals are:
BC 19, 192h, Clark, NASA geodetic program for 1993
BL 2, 231h, Lestrade, Stellar astrometry for HIPPARCOS tie-in
BB 9, 240h, Baath, Use of recorders at KP, OV for mm VLBI
BB 23, 240h, Beasley, Astrometric survey of strong Merlin calibrators
BC 40, 275h, Clark, NASA geodetic program for 1995
BC 37, 370h, Clark, NASA geodetic program for 1994
(BC 23 is still active, shooting for 336h)

------- end -------
From VM Tue Oct 15 09:30:27 1996

From: dbacker@fs1.mpifr-bonn.mpg.de (Don Backer)
To: abridle@nrao.edu, dbacker@astron.Berkeley.EDU
Subject: my thoughts
Date: Mon, 14 Oct 96 09:53:22 +0200

Alan & Committee Members,

I think I have read all recent material from you although communications have been sluggish across the Atlantic.

It is difficult for me to decide on hard policy with regard to intermediate length proposals: low 100's of hours vs 1000. The FIRST/NVSS programs are distinct. No one would doubt that they needed to be treated separately, and as the situation developed I assess that good precedent was set to handle similar situations should they arise in the future.

As my MSc advisor, the drole Henry Palmer, once told me sitting on a couch in Green Bank in 1972 when I was rattling on about some proposal and what the program committe would think, 'Ask for what you need'. There's important content in this brief advice. Scientists need to decide what they want to do, and how they will go about it including what they can manage. Not all scientists are created equal, nor are they equally situated. We have to live with this and allow the community to sort itself out -- an evolving common law approach rather than rigid fixed policy.

I believe there is a strong distinction between SURVEY proposals such as FIRST/NVSS -- which conduct a major sky survey with excellent uniformity and serves a wide community of users in its data product -- and PROGRAM proposals such as elusive search for pancakes or imaging of a complete sample of quasars. The distinction is in the degree of service of product vs the steady advance of scientific inquiry. I'm assuming in both cases they are involved in 100's of hours of observing. [Note, as I am involved here in Bonn with writing 100m proposals, that MPIfR has a 100 hr threshold for directorial review of proposals; naturally ours will all be for 96 hr.]

When I was involved with VLBI Network, we discussed in NUG meetings that some 20% of alotted time might go for long term projects, multi-year, with the requirement for annual progress reports. This was fought for by the larger groups that wanted to tackle such programs as tracking superluminal quasars and imaging 5-GHz complete samples. They were the larger VLBI research groups, Caltech and MPIfR, and wanted to ensure that their program goals were met. Their efforts were an important step and the community agreed to this alottment. In practice the annual reports were essentially new proposals and I don't think any special

policy was actually needed (i.e., we could have quit the NUG meetings earlier in evening and retired to nearest pub!).

Barry's list from VLA/VLBA is interesting. Clearly one can take such distributions and conclude that what needs to be reviewed is 3-5 sigma events, many 100's of hours. Within these distributions are of course programs that have accumulated 100's of hours by regularly submitting proposals to take next step as the investigations unfold. Good scientists with short and long term goals can prosper within this -- they have to write papers regularly to get funding anyway. The only proposal in these that I see in need of review might be the geodetic program -- no doubt a winner, but definitely a major VLBA user. The VLBA also has dealt with OVLBI and that has already been done; money talks. The VLA dealt with JPL on Jupiter probe; again. The Rodriguez proposal is I expect a paybavk for providing those 7mm receivers to VLA. The Coordinated Millimeter VLBI Array is also making large use of VLBA instrumentation. It's a zoo of different activities, and not one that will fit into formal guidelines.

I think it was Mao who said, 'let a thousand flowers bloom'.

Skeptical reviewing is good suggestion for proposals at and off the end of the distribution at each telescope. PI's should welcome this even as it sharpens their focus. The projects taht accumulate 100's of hours are being scrutinized in telescope proposals, funding proposals, and paper referreing; that's probably enough! If the proposal leads to multi-year observing, then monitoring progress is essential. The community needs to be involved/informed at users meetings/etc as to policy and progress.

Don in Bonn

From: churchwell@madraf.astro.wisc.edu
To: ABRIDLE@NRAO.EDU, DBACKER@astron.Berkeley.EDU,
HAYNES@ASTROSUN.TN.CORNELL.EDU, JHEWETT@MIT.EDU, DHOGG@NRAO.EDU,
KYL@SGR.ASTRO.UIUC.EDU
Subject: NRAO Large Prop Committee
Date: Sat, 12 Oct 1996 11:19:12 EDT

On the first question: "Is there a level of observing time (or other resources) at which we should consider treating an observing proposal differently than usual?"

My answer is the same as Dave Hogg's and Don Backer's. YES

Since NRAO is a national facility with a mandate to serve the whole community's access to state-of-the-art radio observing facilities, anytime one observer or group of observers requests a very large fraction of the available time it restricts NRAO's ability to give access to the broader community. So my criteria of an unusally large program would be one that becomes restrictive for NRAO to serve the broader community if scheduled. Where this threshold occurs is complicated by the type of program requested. If for example a program would block out all other programs in a give RA range for one complete configuration, I would consider this as a program that should receive special scrutiny. I would be hesitant to suggest a specific number of hours for the threshold beyond which a program would receive special treatment. However, some guidelines are necessary for users to know roughly when a proposal is likely to be given special scrutiny. I would guess that this threshold should be somewhere in the range 200 to 500 hours, with some leeway given to specific timescales for the project and whether the program uses RA slots that are more or less heavily subscribed.

I like the idea of "skeptical reviewing" of unusaually large proposals. Programs that require inordinate amounts of time should be strong enough to withstand a "skeptical review". What should be done beyond this stage? I think we have to be careful not to make the process so daunting that people will not bother trying even those projects that would be of great benefit to the community as a whole. Obviously, there needs to be some monitoring of progress during the process. One also has to think about the time invested in reviewing and monitoring these programs. It should not become so burdensome that it is hard to fine people willing to do it. What I'm trying to say here is that I'm not sure of the 4-step approach Alan suggests, but I think the first and last ones are approapriate (skeptical reviewing and monitoring).

I also do not see what purpose a general AO for long proposal is likely serve. I recommend against this.

From: "David Hogg" <dhogg@NRAO.EDU>
To: abridle@nrao.edu (Alan Bridle)
Cc: dhogg@polaris.cv.nrao.edu (David Hogg)
Subject: Re: NRAO Large Proposal Committee
Date: Tue, 15 Oct 1996 08:47:37 -0400 (EDT)

Alan,
I send this to you only, to pass on just a couple of comments.
First, I did not get the Backer note which Churchwell referred
to. If you did, please send me a copy. But perhaps Ed mistook
the origin of your note, and thought it was Backer's. Second,
I will continue to wait a bit before replying to your questions
about procedures for large proposals. I should comment however
that I thought your discussion was very useful, and I do not
think that I will add much that is new.

Dave

From: abridle (Alan Bridle)
To: dhogg
Subject: forwarded message from Don Backer
Date: Tue, 15 Oct 1996 09:33:31 -0400

------- start of forwarded message (RFC 934 encapsulation) -------
From: dbacker@fs1.mpifr-bonn.mpg.de (Don Backer)
To: abridle@nrao.edu, dbacker@astron.Berkeley.EDU
Subject: my thoughts
Date: Mon, 14 Oct 96 09:53:22 +0200

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geodetic program -- no doubt a winner, but definitely a major
VLBA user. The VLBA also has dealt with OVLBI and that
has already been done; money talks. The VLA dealt with JPL on Jupiter
probe; again. The Rodriguez proposal is I expect a payback for
providing those 7mm receivers to VLA. The Coordinated Millimeter
VLBI Array is also making large use of VLBA instrumentation.
It's a zoo of different activities, and not one that will fit
into formal guidelines.

I think it was Mao who said, 'let a thousand flowers bloom'.

Skeptical reviewing is good suggestion for proposals at and
off the end of the distribution at each telescope. PI's should
welcome this even as it sharpens their focus. The projects taht
accumulate 100's of hours are being scrutinized in telescope
proposals, funding proposals, and paper referreing; that's probably
enough! If the proposal leads to multi-year observing, then
monitoring progress is essential. The community needs to be
involved/informed at users meetings/etc as to policy and progress.

Don in Bonn
------- end -------

From: abridle (Alan Bridle)
To: churchwell@madraf.astro.wisc.edu, haynes@astrosun.tn.cornell.edu,
jhewitt@mit.edu, kyl@sgr.astro.uiuc.edu
Subject: NRAO Large Proposals Committee: forwarded from Don Backer
Date: Tue, 15 Oct 1996 10:17:23 -0400

Dave Hogg tells me that he had not seen a message from Don Backer as mentioned by Ed Churchwell in Ed's 12 Oct note. I received this first "general" message from Don on 14 Oct, so it may not be what Ed was referring to. But as it had no distribution list, I am forwarding it to everyone else on the committee.

I will send everyone a list of the messages I have received so far which were clearly intended for the whole committee, to check if any are in fact "missing in action".

Alan B.

------- start of forwarded message (RFC 934 encapsulation) -------

From: dbacker@fs1.mpifr-bonn.mpg.de (Don Backer)
To: abridle@nrao.edu, dbacker@astron.Berkeley.EDU
Subject: my thoughts
Date: Mon, 14 Oct 96 09:53:22 +0200

Alan & Committee Members,

I think I have read all recent material from you although communications have been sluggish across the Atlantic.

It is difficult for me to decide on hard policy with regard to intermediate length proposals: low 100's of hours vs 1000. The FIRST/NVSS programs are distinct. No one would doubt that they needed to be treated separately, and as the situation developed I assess that good precedent was set to handle similar situations should they arise in the future.

As my MSc advisor, the drole Henry Palmer, once told me sitting on a couch in Green Bank in 1972 when I was rattling on about some proposal and what the program committe would think, 'Ask for what you need'. There's important content in this brief advice. Scientists need to decide what they want to do, and how they will go about it including what they can manage. Not all scientists are created equal, nor are they equally situated. We have to live with this and allow the community to sort itself out -- an evolving common law approach rather than rigid fixed policy.

I believe there is a strong distinction between SURVEY proposals such as FIRST/NVSS -- which conduct a major sky survey with excellent uniformity and serves a wide community

of users in its data product -- and PROGRAM proposals such as elusive search for pancakes or imaging of a complete sample of quasars. The distinction is in the degree of service of product vs the steady advance of scientific inquiry. I'm assuming in both cases they are involved in 100's of hours of observing. [Note, as I am involved here in Bonn with writing 100m proposals, that MPIfR has a 100 hr threshold for directorial review of proposals; naturally ours will all be for 96 hr.]

When I was involved with VLBI Network, we discussed in NUG meetings that some 20% of alotted time might go for long term projects, multi-year, with the requirement for annual progress reports. This was fought for by the larger groups that wanted to tackle such programs as tracking superluminal quasars and imaging 5-GHz complete samples. They were the larger VLBI research groups, Caltech and MPIfR, and wanted to ensure that their program goals were met. Their efforts were an important step and the community agreed to this alottment. In practice the annual reports were essentially new proposals and I don't think any special policy was actually needed (i.e., we could have quit the NUG meetings earlier in evening and retired to nearest pub!).

Barry's list from VLA/VLBA is interesting. Clearly one can take such distributions and conclude that what needs to be reviewed is 3-5 sigma events, many 100's of hours. Within these distributions are of course programs that have accumulated 100's of hours by regularly submitting proposals to take next step as the investigations unfold. Good scientists with short and long term goals can prosper within this -- they have to write papers regularly to get funding anyway. The only proposal in these that I see in need of review might be the geodetic program -- no doubt a winner, but definitely a major VLBA user. The VLBA also has dealt with OVLBI and that has already been done; money talks. The VLA dealt with JPL on Jupiter probe; again. The Rodriguez proposal is I expect a payback for providing those 7mm receivers to VLA. The Coordinated Millimeter VLBI Array is also making large use of VLBA instrumentation. It's a zoo of different activities, and not one that will fit into formal guidelines.

I think it was Mao who said, 'let a thousand flowers bloom'.

Skeptical reviewing is good suggestion for proposals at and off the end of the distribution at each telescope. PI's should welcome this even as it sharpens their focus. The projects taht accumulate 100's of hours are being scrutinized in telescope proposals, funding proposals, and paper referreing; that's probably enough! If the proposal leads to multi-year observing, then monitoring progress is essential. The community needs to be involved/informed at users meetings/etc as to policy and progress.

Don in Bonn
------- end -------

From: abridle (Alan Bridle)
To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu
Subject: NRAO Large Proposals Committee - message log
Date: Tue, 15 Oct 1996 10:55:04 -0400

To all committee members,

Here is my log of all E-mail that I have received that was E-addressed to, or clearly intended for, all on the committee. I am sending it just to verify whether anything has in fact "gone missing", given a recent question to that effect.

Items in {} were not in the subject lines as mailed but are added for clarification here. "LPC" is shorthand for the committee name (which you may have noticed I am unable to recall consistently in fuller form!)

Please let me know a.s.a.p. if you did not receive any of these, or if you received any that are not on this list. (Fred Lo's was the only initial acknowledgement sent to the whole list, all others were to me only so not included here.)

I will update this to you all from time to time to check completeness.

Alan B.

==========

DATE	FROM	SUBJECT
19 Sep	Alan Bridle	NRAO LPC {initial charge}
19 Sep	Fred Lo	Re: NRAO LP {acknowledgement}
20 Sep	Alan Bridle	NRAO LPC: questions
07 Oct	Alan Bridle	NRAO LPC: NRAO Newsletter
08 Oct	David Hogg	My thoughts on your questions
09 Oct	Alan Bridle	NRAO LPC - my views on first question
09 Oct	Alan Bridle	NRAO LPC - steps to thresholds
09 Oct	Alan Bridle	NRAO LPC - VLA/VLBA statistics
12 Oct	Ed Churchwell	NRAO LPC {thoughts on first question}
14 Oct	Don Backer	My thoughts
15 Oct	Alan Bridle	{forward of Don B's 14 Oct message to all}
15 Oct	Alan Bridle	NRAO LPC - message log

From: abridle (Alan Bridle)
To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu
Subject: NRAO Large Proposals Committee - next step?
Date: Thu, 14 Nov 1996 15:44:04 -0500

I haven't been bugging you recently about this committee, partly because of other commitments, and partly to see whether the NRAO Newsletter item would elicit responses from users. It has not, so I think we now have to go forward without much input from users in general.

Here are some items for discussion:

1. Our format.

Only four of the committee (Don Backer, Ed Churchwell, Dave Hogg, me) have contributed E-mail to the discussion so far. Does this mean that the others (Martha Haynes, Jackie Hewitt, Fred Lo) agree with the trend of the others so far? Or just that E-mail discussion doesn't work well for them? Do we need to teleconference to bring everyone into the discussion?

2. Our progress so far.

The four E-mail participants seem to agree (1) that expanded "skeptical reviewing" of proposals above a threshold in the 200-300 hr range is appropriate, and (2) that Announcements of Opportunity are not. Does anyone disagree with either of these?

3, How much policy is enough?

My second message on 9 Oct suggested three possible further stages of review for some large proposals:

(a) "expert advice" before scheduling (e.g. via workshops),
(b) "special scheduliong", and
(c) "expert monitoring" of progress and data handling.

I raised these three stages mainly to start discussion, not because I felt they are all appropriate for all large proposals. Both Don Backer and Ed Churchwell replied in favor of not making the process too burdensome or inflexible beyond an initial review.

I agree that we should suggest flexible procedures to Paul. The trick will be to balance flexibility against demonstrating that the impact of future large projects on other NRAO users' research will be evaluated carefully,

Both the NVSS and FIRST surveys at the VLA refined their observing strategies in response to "expert advice". Such advice may help other large projects (I suggested a 1000-hr threshold for mandatory advice, otherwise leaving it to the recommendation of the "skeptical

reviewers").

Some users have told me privately that the rapid public archiving of the NVSS and FIRST datasets helped them to accept the constraints on general VLA observing that these two surveys entailed. I think we should require public archiving of a sufficiently large project's database, both to guarantee general access to the data and to measure a project's data-processing progress before continuing to allocate time to it. This may not be necessary for all projects that we would expose to "skeptical review", however.

It has been argued that "one survey at a time on the VLA" would have been preferable to doing two together (even in different configurations). Some generic scheduling guidelines may be needed, especially if large proposals dominate one LST range. I feel that it's not fair or appropriate to leave all such decisions to the telescope schedulers, and we should try to recommend some limits.

These issues might all be addressable in a format that starts with just one ad hoc "skeptical review" panel per large proposal. I think we should aim to give Paul a list of further review stages that might be considered, whether or not we feel they should all be applied to all projects above some threshold. Paul could then involve the "skeptical" panels and/or other ad hoc expert groups to decide how much extra monitoring is appropriate for proposals that get good initial reviews.

We should address the scheduling issues at least so far as answering Paul's question: "Should there be any upper limit to the fraction of observing time at each telescope that could be allocated to large projects?".

I invite comments, particularly from those of you who have not been heard from yet in the E-mail, on

(a) whether to ask the ad hoc "skeptical reviewers" to recommend further review procedures for sufficiently large projects (as opposed to focussing just on the proposal science),

(b) whether we should indeed recommend further review steps to be considered (but not necessarily applied in all cases) for proposals that pass the skeptical review,

(c) your answer to Paul's "upper limit" question.

I'll try to contact you by phone if I don't hear from you by E-mail within a week!

Regards,

Alan B.

From: kyl@astro.uiuc.edu
To: dbacker@astron.Berkeley.EDU, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@cv3.cv.nrao.edu,
kyl@astro.uiuc.edu, abridle@cv3.cv.nrao.edu
Subject: Re: NRAO Large Proposals Committee - next step?
Date: Fri, 15 Nov 1996 10:40:45 -0600

> From abridle@nrao.edu Thu Nov 14 14:44:16 1996
> Date: Thu, 14 Nov 1996 15:44:04 -0500
> From: abridle@nrao.edu (Alan Bridle)
> To: dbacker@astron.Berkeley.EDU, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@astro.uiuc.edu
> Subject: NRAO Large Proposals Committee - next step?
>
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> because of other commitments, and partly to see whether the NRAO
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> the others (Martha Haynes, Jackie Hewitt, Fred Lo) agree with the
> trend of the others so far? Or just that E-mail discussion doesn't
> work well for them? Do we need to teleconference to bring everyone
> into the discussion?
>

Yes to all questions above, at least from my perspective. KYL

> 2. Our progress so far.
>
> The four E-mail participants seem to agree (1) that expanded
> "skeptical reviewing" of proposals above a threshold in the 200-300 hr
> range is appropriate, and (2) that Announcements of Opportunity are
> not. Does anyone disagree with either of these?
>

I agree with above. Not declaring a specific threshold is important.

> 3, How much policy is enough?
>
> My second message on 9 Oct suggested three possible further stages of
> review for some large proposals:
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> (a) "expert advice" before scheduling (e.g. via workshops),
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> felt they are all appropriate for all large proposals. Both Don
> Backer and Ed Churchwell replied in favor of not making the process
> too burdensome or inflexible beyond an initial review.
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> will be to balance flexibility against demonstrating that the impact
> of future large projects on other NRAO users' research will be
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> otherwise leaving it to the recommendation of the "skeptical
> reviewers").
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> the NVSS and FIRST datasets helped them to accept the constraints on
> general VLA observing that these two surveys entailed. I think we
> should require public archiving of a sufficiently large project's
> database, both to guarantee general access to the data and to measure
> a project's data-processing progress before continuing to allocate
> time to it. This may not be necessary for all projects that we would
> expose to "skeptical review", however.
>

To the degree that large projects are made possible by the rest
of the user community "giving rp" their "share" of telescope time,
public archiving of large project data seems reasonable.

> It has been argued that "one survey at a time on the VLA" would have
> been preferable to doing two together (even in different
> configurations). Some generic scheduling guidelines may be needed,
> especially if large proposals dominate one LST range. I feel that it's
> not fair or appropriate to leave all such decisions to the telescope
> schedulers, and we should try to recommend some limits.
>

this is related to the issue of upper limit to fraction of large project
times.

> These issues might all be addressable in a format that starts with
> just one ad hoc "skeptical review" panel per large proposal. I think
> we should aim to give Paul a list of further review stages that might
> be considered, whether or not we feel they should all be applied to
> all projects above some threshold. Paul could then involve the
> "skeptical" panels and/or other ad hoc expert groups to decide how
> much extra monitoring is appropriate for proposals that get good
> initial reviews.
>
> We should address the scheduling issues at least so far as answering
> Paul's question: "Should there be any upper limit to the fraction of
> observing time at each telescope that could be allocated to large
> projects?".
>

Yes, but what is the appropriate fraction of all usage for large projects ?
The fraction might have to be varied depending on the project and the
timeliness of the project.

> I invite comments, particularly from those of you who have not been
> heard from yet in the E-mail, on
>
> (a) whether to ask the ad hoc "skeptical reviewers" to recommend
> further review procedures for sufficiently large projects (as opposed
> to focussing just on the proposal science),

Someone has to assess the impact of the large projects on the
general user community for the particular telescope. As I understand
it, general question on the impact of NVSS and FIRST was raised
at a users' meeting, but there was no response at the time.
Apparently, no one thought far enough ahead of the impact at that
meeting.

>
> (b) whether we should indeed recommend further review steps to be
> considered (but not necessarily applied in all cases) for proposals
> that pass the skeptical review,
>

Yes.

> (c) your answer to Paul's "upper limit" question.
>

There should be an upper limit, but I would like to hear some
discussions of related issues before I can home in on an appropriate
limit.

Cheers,
KYL

> I'll try to contact you by phone if I don't hear from you by E-mail
> within a week!
>
> Regards,
>
> Alan B.
>
>
>
>
>
>
>

From: "David Hogg" <dhogg@polaris.cv.nrao.edu>
To: abridle@polaris.cv.nrao.edu (Alan Bridle)
Cc: dbacker@astron.Berkeley.EDU, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu,
kyl@sgr.astro.uiuc.edu, dhogg@polaris.cv.nrao.edu (David Hogg)
Subject: Large proposals - next step
Date: Mon, 18 Nov 1996 17:06:23 -0500 (EST)

Hi Alan,
Here are my answers to the questions in your recent note:

2. Our progress so far.

>The four E-mail participants seem to agree (1) that expanded
>"skeptical reviewing" of proposals above a threshold in the 200-300 hr
>range is appropriate, and (2) that Announcements of Opportunity are
>not. Does anyone disagree with either of these?

I agree with each of these statements.

3, How much policy is enough?

>(a) whether to ask the ad hoc "skeptical reviewers" to recommend
>further review procedures for sufficiently large projects (as opposed
>to focussing just on the proposal science),

I believe very strongly that a decision will have to be made on most
large proposals as to whether they should be reviewed on technical
grounds, and whether the progress in analyzing and archiving the data
has been satisfactory. If the skeptical review committee does not make
the recommendation, then the NRAO (either the proposal selection committee,
or the relevant Assistant Director) will have to. I would prefer that
the skeptical review committee be asked to make a recommendation of this
question, and its membership should be chosen in part with this task in mind.

The specific issues which I have in mind are drawn from the experience with
the VLA surveys. First,I believe that there were serious technical issues that
had to be settled for each of the surveys. The issues were primarily in the
area of data analysis, but I can easily imagine questions of observing technique
might also be raised. Second, it is my impression from the Users' Meetings
that the community relied upon the review committee to ensure that the data
would be archived in a manner such that it was available to the public in
a readily-accessible and timely manner. No doubt the PI's would have done so
any way, but I believe the committee was helpful in strengthening the resolve
of the PI's.

>(b) whether we should indeed recommend further review steps to be
>considered (but not necessarily applied in all cases) for proposals
>that pass the skeptical review,

I recommend that provision be made to have additional review of certain large
proposals, for the reasons I gave above. I agree that we should not require
additional review of all largish proposals. Proposals that are straightforward
in terms of observing technique and data analysis, but which require 'simply'
large amounts of time, might be selected on the basis of a favorable

evaluation of the skeptical review committee. But a proposal which challenges the current technical frontier (Zeeman work on the GBT, a dramatic new pulsar search strategy) and which requires an extensive block of time should surely be reviewed by a group with a strong technical background.

As I said above, the recommendation for additional review seems to me to be a natural charge to the skeptical review committee.

>(c) your answer to Paul's "upper limit" question.

I confess to being pretty wishy-washy on this. I would couch the answer to Paul in terms of a suggestion, rather than a recommendation, just to allow him some leeway. I can also imagine that the limits might be different from telescope to telescope. That said, my answer to an upper limit is:
1/3 of the time for one year, or 1/6 of the time for three years.

Regards,

Dave

From: Marcello Felli <felli@arcetri.astro.it>
To: abridle@cv3.cv.nrao.edu
Date: Tue, 19 Nov 1996 11:53:49 +0100 (MET)

To: The members of the NRAO Large Proposals Committee

From: Marcello Felli
Osservatorio di Arcetri
Largo E. Fermi 5,
50125 FIRENZE
ITALY

Personal views on the points raised in the newsletter 69.

My personal direct involvement with large proposals comes from a VLA survey of known H2O masers that I had proposed last year (and which was turned down). I would like first to use this experience as a reference example for my comments to the LP Committee, and then extend my comments to the more general problem of handling large proposals. Obviously, this is by no means a tentative re-submission of the proposal,

The basic reasons for my proposal were:

1) H2O masers provide one of the best indicators of sites where stars have recently formed (I am referring to the masers associated with star forming regions) and the VLA in the A configuration can give positions accurate to better than 0.1 arcsec, that can be used as precise targets for other observations (not a trivial information when exploring the sky at better than one arcsec resolution).

2) This positional information can be used for many other studies and associations with other observations at arcsec resolution that are now becoming available (i.e. near IR surveys, molecular surveys, radio continuum, submillimiter continuum etc.). Our "scientific" papers are based on direct VLA H2O observations as well as on those found in the literature.

3) The picture that is emerging for multifrequency arcsec resolution studies of individual objects changes quite drastically the results available up to now. Hence the importance of knowing the positions and distribution of the masers spots.

4) The number of known masers (from single dish surveys) of this type is of the order of 300-400 (depending on the limiting flux density used). A sizable fraction of these (say 15-20 %) have already been observed with the VLA in different configurations and with the information disseminated in many different papers (not always homogeneous or responding to the demand of an outsider that requires accurate presentation of the results). Consequently, the observation of ALL the maser was a LARGE, but not unreasonably large, project.

Given the large amount of work required, I was able to put together a fairly large group of interested people (each wishing to give his share of the required work), and to set-up a coordinated program of survey of the level of emission of the maser sources with the Medicina single

dish radiotelescope (i.e. to observe with the VLA only the sources above a threshold flux density). Our interest was to compare the results with near IR images which were being taken with the TIRGO telescope and with proposed and on-going millimiter molecular observations.

The motivation for a large proposal was based on the conviction that, rather than making artificial selections of sub-samples, the best approach to the problem was to study ALL the maser in a similar fashion and by the same group of people, to provide in a first instance, essentially as a service to the community and not only for our personal scientific projects, an homogeneous set of data (basically: positions, flux density and velocity of the components). Basically, once you have started a program, the total effort is much less than the effort for a single source multiplied by the number of sources, hence the convenience. This is a widely speread approach in extragalactic projects, but less used in galactic research.

I want to stress the "service" aspect, which to me is the most important point.

By asking for a large amount of time we implicitly postponed our scientific goals (more easily reachable with a smaller number of sources) and gave priority to the homogeneity of the survey, with the feeling that soon of later any of these masers would have been observed by someone, and that the most efficient way to handle the observations was to make a large effort and get the data for all (or almost all) the known masers. Such a large survey project required a lot of work and one should consider himself satisfied to be able to produce a table with the results of the observations, i.e. with no science in the standard referee's sense. Any follow-up science was not the direct goal of the proposal, even though clearly we had in mind to use these results. However, anyone else would be put in the same position as our group to do any sort of science that might come up with the observational results. We even stated in the proposal that we would welcome anyone interested to take part in the project.

More generally, survey projects, in my view, reach their goal if they provide data bases that anyone else can easily use. To use an extreme example in order to clarify my point, I do not think that people who started the Palomar Sky Survey were requested to produce scientific outputs. The survey itself was the scientific output.

The comments that I got from the referee clearly indicated that the spirit of the proposal had not been understood. Comments were like:
"the scientific motivation were weak because we could just locate sources",
or "the referee did not see the need to observe such a large sample",
or "it was not clear if new insight could come from such a study",
or, finally, "vague scientific motivations".

Clearly, the referees had a different "filter" (the scientific merit) to judge proposal, and the mismatch was too great.

This is why I read with interest the creation of a committee for large proposal and felt very important that NRAO explores the possibility of a different approach to the refereeing of large proposals, or, more generally, to the allocation of telescope time.

Let me now exit from my personal experience and try to give more general

inputs to the committee.

I have always felt that in the case of large projects which can provide data usable by a large community, the standard approach of individual proposals and refereeing does not work at its best and that it should be reversed. Even though the VLA was not born as a survey instrument (as for instance the Medicina Norther Cross), still there are fields of research where a more systematic approach (or at least a more coordinated approach) is more rewarding than a sum of many different individual projects not talking to each other.

If the L.P. committee (eventually asking inputs from the users) can define fields of research in which a better use of the telescope time is by means of survey projects (defined as those that cover a large body of sources, that avoid duplications, that give homogeneity to the data, that avoid dissemination of the information in many different works, that do not exacerbate competition, often forcing the committee to split the pie in many different pieces to satisfy the requests of many different proposers), if the LP committee can separate the duty of a telescope (which can only provide good data) from that of the scientist, (which must be able to do good science), then, it should be the LP committee itself that announces to the scientific community the opportunity to participate in joint large observing projects. The LP committee could start with some pilot program and check how the community reacts to the initiative.

The LP committee should stimulate (and eventually control) the creation of a group of interested scientists who declare the intention to dedicate time to the handling of the observations and the data reduction, and with the main goal of a rapid distribution of the results to the community, it should oversee the dissemination of the results, take care of the proper archiving of the results and allocate time to the group on a regular basis, with the only constraint that further time gets allocated only when the reduction of the previous data is completed.

I know that what I am proposing is by no means new and that it has many difficulties. However, it works satisfactorily for space satellite projects.

The first difficulty comes from the individuals. Being allocated observing time is often vital to the individuals to obtain grants, etc. However, I have seen too many cases in my lifetime of good data being kept closed in the drawer for years, honestly thinking that it was the right thing to do as if having obtained the time gave the lifetime property of the data. This, in my view, is wrong and any possible cure that can be found would be welcomed, especially considering that NRAO is a national facility (with also large access to foreigns).

The second difficulty (not too different from the previous) is putting together people and coordinating them. I have very little experience in this area, but I think it pays to try.

I see also another problem, that of publication of the results.

Unfortunately nowadays the journals tend to favour "scientific" paper
(i.e. speculations) and reject massive presentation of data.
For instance, remaining in the field of H2O masers, the only VLA large survey,
that of Forster and Caswell 1989, A&A 213, 339, gives only the position
(and flux and velocity) of the brightest peak for each maser group!
I was able to work on the entire data set thanks to the courtesy of the authors
who sent me the entire table of results.
However, to my knowledge, this table was never published.
Perhaps, if this tendency continues, observatories will have to go back to
the time in which the results were published as internal reports.
This could easily be handled in electronic form with access via the network.

I hope my comments are sufficiently clear.
In any case, I am ready to answer questions the LP committee might
want to ask.

Marcello Felli

Florence, mid November 1996.

From: abridle (Alan Bridle)
To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu
Subject: NRAO Large Proposals Committee - from Marcello Felli
Date: Tue, 19 Nov 1996 10:09:46 -0500

Here is the first response to the Newsletter item.

Alan B.

------- start of forwarded message (RFC 934 encapsulation) -------

Message-Id: <199611191053.LAA18715@thor.arcetri.astro.it>
From: Marcello Felli <felli@arcetri.astro.it>
To: abridle@cv3.cv.nrao.edu
Date: Tue, 19 Nov 1996 11:53:49 +0100 (MET)

To: The members of the NRAO Large Proposals Committee

From: Marcello Felli
Osservatorio di Arcetri
Largo E. Fermi 5,
50125 FIRENZE
ITALY

Personal views on the points raised in the newsletter 69.

My personal direct involvement with large proposals comes from a VLA survey of known H2O masers that I had proposed last year (and which was turned down). I would like first to use this experience as a reference example for my comments to the LP Committee, and then extend my comments to the more general problem of handling large proposals. Obviously, this is by no means a tentative re-submission of the proposal,

The basic reasons for my proposal were:

1) H2O masers provide one of the best indicators of sites where stars have recently formed (I am referring to the masers associated with star forming regions) and the VLA in the A configuration can give positions accurate to better than 0.1 arcsec, that can be used as precise targets for other observations (not a trivial information when exploring the sky at better than one arcsec resolution).

2) This positional information can be used for many other studies and associations with other observations at arcsec resolution that are now becoming available (i.e. near IR surveys, molecular surveys, radio continuum, submillimiter continuum etc.). Our "scientific" papers are based on direct VLA H2O observations as well as on those found in the literature.

3) The picture that is emerging for multifrequency arcsec resolution studies of individual objects changes quite drastically the results available up to now. Hence the importance of knowing the positions

and distribution of the masers spots.

4) The number of known masers (from single dish surveys) of this type is of the order of 300-400 (depending on the limiting flux density used). A sizable fraction of these (say 15-20 %) have already been observed with the VLA in different configurations and with the information disseminated in many different papers (not always homogeneous or responding to the demand of an outsider that requires accurate presentation of the results). Consequently, the observation of ALL the maser was a LARGE, but not unreasonably large, project.

Given the large amount of work required, I was able to put together a fairly large group of interested people (each wishing to give his share of the required work), and to set-up a coordinated program of survey of the level of emission of the maser sources with the Medicina single dish radiotelescope (i.e. to observe with the VLA only the sources above a threshold flux density). Our interest was to compare the results with near IR images which were being taken with the TIRGO telescope and with proposed and on-going millimiter molecular observations.

The motivation for a large proposal was based on the conviction that, rather than making artificial selections of sub-samples, the best approach to the problem was to study ALL the maser in a similar fashion and by the same group of people, to provide in a first instance, essentially as a service to the community and not only for our personal scientific projects, an homogeneous set of data (basically: positions, flux density and velocity of the components). Basically, once you have started a program, the total effort is much less than the effort for a single source multiplied by the number of sources, hence the convenience. This is a widely speread approach in extragalactic projects, but less used in galactic research.

I want to stress the "service" aspect, which to me is the most important point.

By asking for a large amount of time we implicitly postponed our scientific goals (more easily reachable with a smaller number of sources) and gave priority to the homogeneity of the survey, with the feeling that soon of later any of these masers would have been observed by someone, and that the most efficient way to handle the observations was to make a large effort and get the data for all (or almost all) the known masers. Such a large survey project required a lot of work and one should consider himself satisfied to be able to produce a table with the results of the observations, i.e. with no science in the standard referee's sense. Any follow-up science was not the direct goal of the proposal, even though clearly we had in mind to use these results. However, anyone else would be put in the same position as our group to do any sort of science that might come up with the observational results. We even stated in the proposal that we would welcome anyone interested to take part in the project.

More generally, survey projects, in my view, reach their goal if they provide data bases that anyone else can easily use. To use an extreme example in order to clarify my point, I do not think that people who started the Palomar Sky Survey were requested to produce scientific outputs. The survey itself was the scientific output.

The comments that I got from the referee clearly indicated that the spirit

of the proposal had not been understood. Comments were like:
"the scientific motivation were weak because we could just locate sources",
or "the referee did not see the need to observe such a large sample",
or "it was not clear if new insight could come from such a study",
or, finally, "vague scientific motivations".

Clearly, the referees had a different "filter" (the scientific merit) to judge proposal, and the mismatch was too great.

This is why I read with interest the creation of a committee for large proposal and felt very important that NRAO explores the possibility of a different approach to the refereeing of large proposals, or, more generally, to the allocation of telescope time.

Let me now exit from my personal experience and try to give more general inputs to the committee.

I have always felt that in the case of large projects which can provide data usable by a large community, the standard approach of individual proposals and refereeing does not work at its best and that it should be reversed. Even though the VLA was not born as a survey instrument (as for instance the Medicina Norther Cross), still there are fields of research where a more systematic approach (or at least a more coordinated approach) is more rewarding than a sum of many different individual projects not talking to each other.

If the L.P. committee (eventually asking inputs from the users) can define fields of research
in which a better use of the telescope time is by means of survey projects (defined as those that cover a large body of sources, that avoid duplications, that give homogeneity to the data,
that avoid dissemination of the information in many different works, that do not exacerbate competition, often forcing
the committee to split the pie in many different pieces to satisfy the requests of many different proposers), if the LP committee can separate the duty of
a telescope (which can only provide good data) from that of the scientist, (which must be able to do good science), then, it should be the LP committee itself that announces to the scientific community the opportunity to participate in joint large observing projects.
The LP committee could start with some pilot program and check how the community reacts to the initiative.

The LP committee should stimulate (and eventually control) the creation of a group of interested scientists who declare the intention to dedicate time to the handling of the observations and the data reduction, and with the main goal of a rapid distribution of the results to the community, it should oversee the dissemination of the results, take care of the proper archiving of the results
and allocate time to the group on a regular basis, with the only constraint that further time gets allocated only when the reduction of the previous data is completed.

I know that what I am proposing is by no means new and that it has many difficulties. However, it works satisfactorily for space satellite projects.

The first difficulty comes from the individuals. Being allocated observing time is often vital to the individuals to obtain grants, etc. However, I have seen too many cases in my lifetime of good data being kept closed in the drawer for years, honestly thinking that it was the right thing to do as if having obtained the time gave the lifetime property of the data. This, in my view, is wrong and any possible cure that can be found would be welcomed, especially considering that NRAO is a national facility (with also large access to foreigns).

The second difficulty (not too different from the previous) is putting together people and coordinating them. I have very little experience in this area, but I think it pays to try.

I see also another problem, that of publication of the results.
Unfortunately nowadays the journals tend to favour "scientific" paper (i.e. speculations) and reject massive presentation of data.
For instance, remaining in the field of H2O masers, the only VLA large survey, that of Forster and Caswell 1989, A&A 213, 339, gives only the position (and flux and velocity) of the brightest peak for each maser group!
I was able to work on the entire data set thanks to the courtesy of the authors who sent me the entire table of results.
However, to my knowledge, this table was never published.
Perhaps, if this tendency continues, observatories will have to go back to the time in which the results were published as internal reports.
This could easily be handled in electronic form with access via the network.

I hope my comments are sufficiently clear.
In any case, I am ready to answer questions the LP committee might want to ask.

Marcello Felli

Florence, mid November 1996.

------- end -------

From: "David Hogg" <dhogg@NRAO.EDU>
To: abridle@cv3.cv.nrao.edu (Alan Bridle)
Cc: dhogg@polaris.cv.nrao.edu (Dgvid Hogg)
Subject: Re: NRAO Large Proposals Committee - from Marcello Felli
Date: Tue, 19 Nov 1996 10:25:38 -0500 (EST)

Alan --
I skimmed through Marcello's comments with interest, and will have to go back and study them. My first impression however is that a) his case is exactly the kind of proposal which we wish to discuss, and b) I personally am very unenthusiastic about his solution.

However, I write you now to raise a specific point: how much time did Marcello's group ask for? If it is said in his note, I missed it in my quick reading, and I apologize for bothering you. If he did not tell us, would you please ask him, so that we know if his case would be impacted by our suggestions.

Dave

From: abridle (Alan Bridle)
To: "David Hogg" <dhogg@NRAO.EDU>
Subject: Re: NRAO Large Proposals Committee - from Marcello Felli
Date: Tue, 19 Nov 1996 10:48:02 -0500

David Hogg writes:
> Alan --
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> it in my quick reading, and I apologize for bothering you. If he
> did not tell us, would you please ask him, so that we know if his
> case would be impacted by our suggestions.
>

I agree with you completely, and no he didn't but I have written to
him to ask how much time he was requesting, and in what LST ranges.

A.

From: abridle (Alan Bridle)
To: Marcello Felli <felli@arcetri.astro.it>
Subject: NRAO Large Proposals Committee
Date: Tue, 19 Nov 1996 10:46:48 -0500

Dear Marcello,

Thank you for your message describing your experience with the water-maser proposal at the VLA and your thoughts for the committee. I have in fact raised the question (among many!) of whether the NRAO should play any role in forming consortia around large surveys. Your message will add perspective to this, and I have forwarded it to the whole committee.

I am interested to know how much time you were asking for in this proposal, and how it was distributed in LST. I certainly sympathize with your comments re the difficulty of getting homogeneous data bases from the "general oberving" practice at the VLA, as I have been struggling with this very issue over the 3CR extragalactic sample!

This committee is still in the early stages of its discussion, but I will mention that we are indeed inclined toward a system wherein "large" survey proposals would be refereed differently. There is also some consensus about what "large" means, which motivates my question to you about the size of your project. Rapid archiving and public access to the fnudamental databases, as done with the NVSS and FIRST surveys, is also widely seen as a key requirement by most of us, and indeed by most NRAO users I have spoken to about this. Have you been following what these surveys have done so far on the Web, and do you think it is sufficient (assuming that all of the data will eventually be there in this fashion)?

Thank you again for writing. Your input is most welcome and I will indeed get back to you again as our discussion proceeds.

With best regards,

Alan Bridle

From: Martha Haynes <haynes@astrosun.tn.cornell.edu>
To: abridle@NRAO.EDU
Subject: Big proposals
Date: Tue, 19 Nov 1996 12:22:54 -0500

Hi Alan,

Somewhat ironically, I am back from a long stint at KPNO where I am undertaking a "key project" on the 0.9m telescope (before they shut it down...). We are doing this key project the old fashioned way - staying up all night (long nights in November) and running everything by ourselves (no telescope operator), so I have had little time to think of anything else. But the weather was good, so I am not complaining.

I have some responses to your recent queries and also some different ideas to toss on the table.

The idea of long term or key projects hits home with me. In general, I agree entirely with the consensus that (1) expanded "skeptical reviewing" of proposals above a threshold in the 200-300 hr range is appropriate, and (2) that Announcements of Opportunity are not.

With respect to (2), it is curious to note (and I think we should at least going on record has thinking negatively on this) that some other observatories actually establish working groups to identify key projects HST did this eons ago. At ESO, there was discussion recentlo by the Observing Programmes Committe concerning possible key projects for the VLT. The OPC has recommended the creation of two working groups, consisting of 10-12 members each to define, with the input and involvement of the ESO astronomical community, whether there are key projects to be done with the VLT, what are their scope and duration, and which are the topics to be considered. I do not think that this has in the past necessarily resulted in better science being done, and I do not advocate it. But in case anybody asks if we considered this possibility, I'd like us to be able to say "we did, but rejected the idea".

On the other hand, I like the NOAO system and think that it has some good points to keep in mind. It shows how a standing policy with few specifics can work. Of course, I have had a key project approved so one might say I am a bit biased. But let me also state that it took 3 tries of submission to get the project approved. We were first given smaller amounts of time each semester and told we could resubmit. In the meantime, I think we demonstrated to the staff that we could handle both the observing and the data load. We also are required to submit a progress report every six months (at the same time as new proposals are due). I think this is fair. Because this is a standing policy, we know what the rules and expectations are. The nice thing is that very little extra fanfare was required on anyone's part.

The NOAO policy deserves a quick summary. No "special" review nor solicitation takes place. Each time proposals are due (twice per year), KPNO/CTIO have the following categories for "special proposals", as a general solicitation. I am taking this directly from their instructions for proposals.

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Key Projects. KPNO encourages proposals for observing programs which seek to answer a significant scientific question of general interest and which require more than the usual allocation of time. Criteria for evaluating Key Projects are as follows. Is the program of high scientific merit? Is the subject of the proposal of general interest to the broader astronomical community? Is access to significant amounts of telescope time necessary to make progress on the scientific problem? Will KPNO telescope time comprise most of the observing for the project? Key Project proposals should also address how the large body of data collected can be made available to the community. If you wish to propose a Key Project, indicate "Key Project" on the front page, and give details in the place designated for "long-term" status. Describe also how smaller allocations of time would be used if the project is not accepted as a Key Project. Key Project proposals are permitted up to two pages of scientific justification. {Martha's note: normal is one}.

Besides my own experience that it took us 3 tries to get our program approved as a key project, it is my understanding that very few proposals submitted for either long term or key status get approved as such. The TAC still looks skeptically at committing large blocks of telescope time in the future semesters. It should also be noted that the HST review eystem reserves for separate review by its mega-TAC (not the subdiscipline panels; the mega-TAC consists of the subdiscipline panel chairs plus perhaps a few other characters) the biggest proposals. I'm not quite sure what the cutoff there is, but it is based on number of orbits (as NRAO's might be in hours).

I bring these other experiences up because (1) I do believe NRAO should have a general standing policy but (2) I do not believe we should be too specific about the "rules" because there are too many free parameters in what people might or might not propose. As others have mentioned, if we set too low a limit (N hours) and have a complicated extra review, people will propose for N hours - 1 to avoid the extra review. Furthermore, my feeling is that we should try to work within the current system without necessarily creating a new review committee for proposals we don't know exist.

While the current NRAO refereeing system does not include a face-to-face TAC (not necessarily bad!), it is my impression that there is sufficient coniinuity in the referees to permit them, with perhaps some reminders, to make at least a first pass on the science proposed by big projects. Might it not be possible to have some subset of the current referees, cutting across disciplines, be asked to look at proposals bigger than some number of hours? This allows the same people deciding on small projects to weigh them against bigger projects that might use up all the time, thereby judging the big projects in the context of their impact. Since this idea seems to work at other wavelengths (some key projects ARE approved),

I believe it could work at NRAO as well. Even I have SOME appreciation of pulsars, the Sun, radio galaxies, etc.!

In addition, I think it is a good idea to let the proposers categorize their own proposals as "special". If you think you have a good case for doing a project that takes up an extraordinary commitment of time or that you just merely want to get done but requires a mix of configurations or time critical observations, I think you'll be happy to jump a few hurdles if you think it will earn you the commitment. Therefore, the somewhat broader review should consider both proposals bigger than a certain hour limit and also ones that proposers categorize as "key" or "long-term". A "long-term" project might not need a lot of time at once, but a guarantee of a commitment of time over say 3-4 years might mean that some people would not have to keep writing proposals to do the exact same thing. If we are trying to make it possible for people to do projects of all sorts that require significant investment in order to get the science done, then I don't think we want necessarily to set the standard purely by the number of hours. It certainly is now possible to do a project piecemeal, but perhaps that is not the best way. Maybe it will take 3 tries to get such a project past the referees as a single package. But if the referees can be persuaded that the whole project needs to be done, why not allow them to be so persuaded? I realize this is a bit peripheral to the task as placed before us, but while we are at it, I suggest we look at the range of possibilities.

There would be some additional education of the referees necessary at this point. They would have to know how much time is available and what the total requests are for proposals in all subdisciplines. Someone has to decide what relative weight should be given to big and small proposals and one subdiscipline versus another. But only by looking at the overall mix of proposals can an adequate value judgement be made.

I don't think we can imagine all the scenarios and possible proposals. So, like others, I think NRAO should be prepared to deal with whatever appears without a rigid set of rules.

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Enough for today,

Martha

From: abridle (Alan Bridle)
To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu
Subject: NRAO Large Proposals Committee - from Martha Haynes
Date: Tue, 19 Nov 1996 13:32:09 -0500

------- start of forwarded message (RFC 934 encapsulation) -------

Message-Id: <199611191724.MAA15650@vieques.tn.cornell.edu>
From: Martha Haynes <haynes@astrosun.tn.cornell.edu>
To: abridle@NRAO.EDU
Subject: Big Proposals
Date: Tue, 19 Nov 1996 12:24:58 -0500

Hi Alan,

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Enough for today,

Martha

------- end -------

From: abridle (Alan Bridle)
To: Martha Haynes <haynes@astrosun.tn.cornell.edu>
Subject: Re: Big Proposals
Date: Tue, 19 Nov 1996 14:50:43 -0500

Hi Martha,

I have separately forwarded your message to the whole committee. This is just to thank you for your thoughtful discussion, and to ask one question about the extra features in the scheme you proposed.

I like the notion that the "skeptical reviewing" panels be drawn as far as possible from the existing referee panels. And I agree that it may also be a good idea to invite proposers to identify their own projects as "long-term" or "key" projects. We may however need to think about why proposers would choose to do this.

Some large projects get done now simply by submitting follow-up proposals. The main practical differences between this "informal" approach and a system of regular progress reports to an on-going review panel may be about timing and who has guaranteed what to whom. In the follow-up method, the timing of subsequent progress reviews is set by the proposers (and by their view of the scientific progress they are making). In return, there are no guarantees, either to the proposers about further observing time or to the community at large about giving access to their calibrated data. In the formal "report" case, the timing is set by the NRAO, the makeup of the reviewing panel is "frozen", and there can be guarantees about access to the data; the proposers can also expect that further observing time will be granted if satisfactory progress is demonstrated -- there is no guarantee, but a reasonable default, that they will get the balance of the time they originally requested.

So: is the "extra incentive" to the "key" or "long-term" project volunteers to be a specific guarantee? And of what? Just of ongoing observing time (within the original proposal parameters) if progress is satisfactory? Or is there also an implication that potentially competitive/overlapping proposals will not be considered while their project is in progress?

I'll wait a few more days before sending another message to the whole group, but perhaps we can explore this one point briefly on the side?

Regards,

Alan

From: Martha Haynes <haynes@astrosun.tn.cornell.edu>
To: abridle@NRAO.EDU
Subject: Re: Big Proposals
Date: Tue, 19 Nov 1996 15:43:57 -0500

Dear Alan,

A quick response as to incentive, from my own point of view.
In the case of our program, there are several incentives:

(1) The obvious one: we don't have to write proposals every six months.
This might seem like a small incentive, but it is a welcome one.

(2) A more scientific incentive is that in fact, we need the whole
body of data to do the science we want to do. To do it piecemeal,
with no guarantee of finishing it, changes one's strategy. You try
to get quick intermediate results so that you can justify next year's
proposal. But for a survey, it really might be better to approach the
problem overall. In the example of our KP photometric imaging project,
we are willing to make some concessions to weather and moon conditions
to make use of non-photometric images that can be post-calibrated
next year during a brighter moon phase. Because we are guaranteed the
whole block of time, we can work out more efficient use of the telescope.
This of course is purely meant as an example, but I bet that piecemeal
approaches are not always maximum efficiency.

(3) A big incentive comes from the practical side of life. It really helps
in being able to tell other review panels (e.g. NSF funding, other
TACs for complementary observations) that the time is allocated for
a big project. For those of us in the NSF
roulette, it is certainly a help to be able to say that observing
time has already been allocated! I already experience this also by being
able to say that I compete for Cornell time on the 5m Palomar telescope
and therefore have a pretty high probability of getting time. Competition
these days is so stiff that being able to say one has a project approved
before submitting the funding request is practically a necessity.

We also could have continued to propose to KPNO piecemeal. However, I have the feeling
that referees might get tired of reading the same old proposal (just as I
would get tired of writing it). It is also possible I should think for
referees to say "this is just the same old proposal, and we'd like to
see evidence of some progress, access to data" etc.
Doesn't that happen at NRAO?

To answer one of your questions, "yes", I think part of the guarantee
is that for the proposers of a "key project" are given some sort of guarantee
that they have a first crack at this scientific project but also that they
must demonstrate adequate progress on it, i.e. that the guarantee is
provisional. Likewise, they should understand that the criteria by which
their proposal will be judged for approval are somewhat stricter, requiring
regular progress reports, and probably, public access to the data product.
However, leave it to them to write the proposal as to how and when to do the
latter. Good proposals will emerge and be approved; others will be rejected.

There of course is a balance to all of this. As with NOAO, I don't expect

a lot of key projects will actually be approved. But I do think the system is helping us to do a better job on the science of our project, partly by forcing us to be held accountable for progress, access, etc, and partly by allowing us a certainoptimization that would be lost if we were not guaranteed the time over the long haul.

Cheers,

Martha

From: Frazer Owen <fowen@aoc.nrao.edu>
To: mgoss@aoc.nrao.edu, pvandenb@aoc.nrao.edu
Cc: abridle@aoc.nrao.edu, gtaylor@aoc.nrao.edu, jcondon@aoc.nrao.edu,
ksowinski@aoc.nrao.edu, rperley@aoc.nrao.edu, rsimon@aoc.nrao.edu
Subject: Final VLA Survey Oversite Committee Recommendations
Date: Thu, 21 Nov 1996 13:59:30 -0700 (MST)

This is the final report of the VLA survey oversight committee. We are pleased that both surveys have gone well. Results are being released and science is being produced from both the FIRST and NVSS surveys.

The NVSS survey is almost complete with only minor makeup time necessary to complete almost the entire sky as visible with the VLA. We recommend that the makeup time be scheduled to complete the survey.

We also recommend that NVSS prepare a set of CDROMs for the community with all the survey images and the completed catalog as soon as it finishes the reductions of the its current dataset. We also encourage the NVSS team to publish their techniques paper as soon as possible.

The FIRST survey is still progressing. The next B-array will complete the time promised to the group; however, the survey will not have completed the sky coverage which was intended to be completed in that time, 5000 square degrees. We recommend the final 20 days of time be scheduled and if practical another 7.5 days of time to complete 5000 square degrees. The FIRST team and the VLA TAC should try to find a way to make this happen during the next B-array.

The region of the sky covered by FIRST in the north galactic cap should be contiguous with the previous FIRST observations and the region in the south galactic cap should cover regions planned to be observed in the Sloan Survey.

The FIRST team has indicated to us that they would like to continue their survey beyond 5000 square degrees. A new policy for large projects is being developed for NRAO instruments. The oversight committee believes that this will provide an appropriate forum for considering this request, and urge that the establishment of the new policy proceed expeditiously, so that a decision on the continuation of the survey may be made in an appropriately short timescale. Other than stating that we believe that the FIRST team can make a competitive proposal for that forum, we do not want to make a specific recommendation concerning future extension of the FIRST survey.

FIRST, as originally conceived by the proposers, is a significantly larger project than the NVSS. Because of its longer timescale, its continuation may, and must, depend on the usefulness of the survey to the community at large. Although the FIRST group has done an outstanding job of studying their own survey, insufficient time has passed since a significant part of the survey has been available to judge its impact on other users. In order to evaluate its usefulness, every effort should be made to make it generally available, and in particular, we encourage NRAO to get the second epoch FIRST images, which they have had for some time,

online as was promised.

On the whole these two VLA surveys have gone well. The products of both surveys should be very useful to the entire community for many years to come. Taken as a whole NVSS and FIRST have been very successful, and, we believe, a worthwhile and productive investment of the observing time committed to them.

From: Marcello Felli <felli@arcetri.astro.it>
To: abridle@NRAO.EDU
Subject: Re: NRAO Large Proposals Committee
Date: Mon, 25 Nov 1996 09:44:57 +0100 (MET)

Dear Alan,

I would like to remark that in the comments I send you (and to the LP Committee) the reference to my proposal was made only to use a concrete example, but was not meant to be either a complain or a veiled re-submission.

To answer your questions, the project (AF289) requested 105 hours and the sources were almost uniformly distributed in LST (with the obvious concentration toward the galactic plane).

With best regards,

Marcello

From: abridle (Alan Bridle)
To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu
Subject: NRAO Large Proposals Committee: meeting
Date: Mon, 9 Dec 1996 17:17:35 -0500

I'd like to move to the next phase of activity for this Committee as follows.

1) I would like to schedule a telephone meeting of the Committee during the week of 16-20 December. To focus it on specific issues, I am drafting a response to all of Paul's original questions on the basis of our E-mail discussion so far. I will circulate this draft to everyone by E-mail tomorrow or Wednesday. I will aim at a 1-hour phone meeting to discuss the issues that arise from the draft, and how to proceed from there.

2) My intention will be to circulate a revised draft for E-mail discussion soon after Christmas, then have another phone meeting if necessary early in January.

3) Could you each let me know by E-mail or phone as soon as possible

(a) what times next week (Dec 16-20) you could definitely _not_ participate in a phone meeting,

(b) any strong preference (Day am/pm) you would have for the date/time of such a meeting next week.

4) The mechanism I propose for the phone meeting is to use the NRAO Charlottesville conference hub, which automatically conferences any number of calls placed to 804-296-7082. If I do this, I would be asking each of you to swallow the cost of an approximately 1-hr call to that 804 number. Please let me know soon if that would be a serious problem for you.

5) If we agree as much about principles as I think we do from the E-mail, then I would hope to give Paul a report before the end of January, and probably without trying to have a face-to-face meeting.

Alan B.

From: Martha Haynes <haynes@astrosun.tn.cornell.edu>
To: abridle@NRAO.EDU
Subject: Re: NRAO Large Proposals Committee: meeting
Date: Mon, 9 Dec 1996 17:36:13 -0500

dear alan,

It is possible that I might have to go to Brookhaven for a day next week for AUI stuff (but I sincerely hope not). That would complicate matters. Otherwise, I think I am available all week, with the exception of Friday afternoon 12/20 after 3pm. Classes are over and so my schedule is pretty open next week (whew!).

Martha

From: churchwell@madraf.astro.wisc.edu
To: abridle@NRAO.EDU
Subject: RE: NRAO Large Proposals Committee: meeting
Date: Mon, 09 Dec 1996 17:46:48 EST

Alan,

I have a class on Tues. and Thurs. at 11:00AM-1:00PM CDT and colloquium on Tues from 3:30 on. Thurs. we have Journal Club from 12:00 to 1:00. Otherwise I can find my way to a phone for the conference call.

With regard to your last question on an upper limit on the fraction of time allocated to large projects, obviously there must be some limit or one could get in the situation where all the time is given to large projects. What is this limit? I think it would likely be different for different telescopes and it may even be a function of time. As a telescope ages and has fewer users competing for time, it might be more appropriate to schedule more large programs on it. For a heavily over-subscribed facility such as the VLA, VLBA, and GBT (presumably) it is not appropriate to schedule more than some upper limit for large programs. What this limit is, is a bit of a sticky issue. I would say as a trial balloon, that when large programs pre-empt smaller more focused programs at about the 25-30% of available time level that this is a threshold beyond which the community is likely to feel substantial pain and is likely to react negatively to so much time allocated to a few at the expense of many.

Ed

From: "David Hogg" <dhogg@NRAO.EDU>
To: abridle@NRAO.EDU (Alan Bridle)
Cc: dhogg@polaris.cv.nrao.edu (David Hogg)
Subject: Just about any time
Date: Tue, 10 Dec 1996 09:22:45 -0500 (EST)

Hi Alan,
I am free almost any time next week. My only firm commitment is Tuesday, 0900-1100. I have a mild preference for the afternoon.

I checked the CV schedule and there are a couple of things in the conference room that would have to be avoided, but basically it is a slow week for activities.

Dave

From: abridle (Alan Bridle)
To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu
Subject: forwarded message from churchwell@madraf.astro.wisc.edu
Date: Tue, 10 Dec 1996 10:01:54 -0500

------- start of forwarded message (RFC 934 encapsulation) -------
Content-Length: 1241
Received: from cv3.cv.nrao.edu by polaris.cv.nrao.edu (AIX 3.2/UCB 5.64/4.07)
id AA37793; Mon, 9 Dec 1996 18:48:56 -0500
Received: from madraf.astro.wisc.edu (madraf.astro.wisc.edu [144.92.179.156]) by
cv3.cv.nrao.edu (8.8.3/8.8.0/CV-2.3) with SMTP id SAA13302 for <abridle@nrao.edu>; Mon, 9
Dec 1996 18:48:55 -0500 (EST)
Received: by madraf.astro.wisc.edu (MX V4.1 VAX) id 2; Mon, 09 Dec 1996
17:46:49 EST
Message-Id: <009AC981.6A3D2FC0.2@madraf.astro.wisc.edu>
From: churchwell@madraf.astro.wisc.edu
To: abridle@NRAO.EDU
Subject: RE: NRAO Large Proposals Committee: meeting
Date: Mon, 09 Dec 1996 17:46:48 EST

Alan,
I have a class on Tues. and Thurs. at 11:00AM-1:00PM CDT and colloquium on Tues from 3:30 on. Thurs. we have Journal Club from 12:00 to 1:00. Otherwise I can find my way to a phone for the conference call.

With regard to your last question on an upper limit on the fraction of time allocated to large projects, obviously there must be some limit or one could get in the situation where all the time is given to large projects. What is this limit? I think it would likely be different for different telescopes and it may even be a function of time. As a telescope ages and has fewer users competing for time, it might be more appropriate to schedule more large programs on it. For a heavily over-subscribed facility such as the VLA, VLBA, and GBT (presumably) it is not appropriate to schedule more than some upper limit for large programs. What this limit is, is a bit of a sticky issue. I would say as a trial balloon, that when large programs pre-empt smaller more focused programs at about the 25-30% of available time level that this is a threshold beyond which the community is likely to feel substantial pain and is likely to react negatively to so much time allocated to a few at the expense of many.

Ed

------- end -------

From: abridle (Alan Bridle)
To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu
Subject: NRAO Large Proposals Committee - more from M.Felli
Date: Mon, 25 Nov 1996 08:57:14 -0500

(I asked Marcello Felli to let us know the number of hours
and LST range of the water-maser survey proposal that he mentioned
in his message that I forwarded on Nov.19th.)

------- start of forwarded message (RFC 934 encapsulation) -------

From: Marcello Felli <felli@arcetri.astro.it>
To: abridle@NRAO.EDU
Subject: Re: NRAO Large Proposals Committee
Date: Mon, 25 Nov 1996 09:44:57 +0100 (MET)

Dear Alan,

To answer your questions, the project (AF289) requested 105 hours and
the sources were almost uniformly distributed in LST (with the obvious
concentration toward the galactic plane).

With best regards,

Marcello

------- end -------

From: abridle (Alan Bridle)
To: Marcello Felli <felli@arcetri.astro.it>
Subject: Re: NRAO Large Proposals Committee
Date: Mon, 25 Nov 1996 08:52:40 -0500

Marcello Felli writes:
> Dear Alan,
>
> I would like to remark that in the comments I send you (and to the LP
> Committee) the reference to my proposal was made only
> to use a concrete example, but was not meant to be either a complain or a
> veiled re-submission.

No confusion, your purpose was completely clear, Marcello!

>
> To answer your questions, the project (AF289) requested 105 hours and
> the sources were almost uniformly distributed in LST (with the obvious
> concentration toward the galactic plane).
>

Thanks for that extra information.

Regards,

Alan B.

From: abridle (Alan Bridle)
To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu
Subject: NRAO Large Proposals Committee - phone meeting
Date: Wed, 11 Dec 1996 12:55:48 -0500

Repeat extracts From my Monday, Dec 9th message:

"I would like to schedule a telephone meeting of the Committee during the week of 16-20 December. To focus it on specific issues, I am drafting a response to all of Paul's original questions on the basis of our E-mail discussion so far. I will circulate this draft to everyone by E-mail tomorrow or Wednesday. I will aim at a 1-hour phone meeting to discuss the issues that arise from the draft, and how to proceed from there."

"Could you each let me know by E-mail or phone as soon as possible

(a) what times next week (Dec 16-20) you could definitely _not_ participate in a phone meeting,

(b) any strong preference (Day am/pm) you would have for the date/time of such a meeting next week."

"The mechanism I propose for the phone meeting is to use the NRAO Charlottesville conference hub, which automatically conferences any number of calls placed to 804-296-7082. If I do this, I would be asking each of you to swallow the cost of an approximately 1-hr call to that 804 number. Please let me know soon if that would be a serious problem for you."

==========
==========

Jackie, Fred, Don ---

please respond a.s.a.p. so we can set this meeting up. There is a substantial window within which Ed, Martha, Dave and I could meet and no problem yet with the proposed arrangement (all call in to 804-296-7082).

But I do need to hear from you a.s.a.p.!

==========
==========

Ed, Martha, Dave, thanks for responding so promptly!

I have my draft about half-done and still hope to circulate it to you by the end of the day today.

Alan B.

From: Martha Haynes <haynes@astrosun.tn.cornell.edu>
To: abridle@NRAO.EDU
Subject: Re: NRAO Large Proposals Committee - phone meeting
Date: Wed, 11 Dec 1996 12:58:46 -0500

Dear Alan,

I am leaving tomorrow (Thurs) at 1:30pm for the KPNO Users'
Committee meeting. If you get the draft done by noon tomorrow,
I can take it with me (in whatever form it is in then). Otherwise,
I will not get it until Monday. Just so you know...

Martha

From: abridle (Alan Bridle)
To: Martha Haynes <haynes@astrosun.tn.cornell.edu>
Subject: Re: NRAO Large Proposals Committee - phone meeting
Date: Wed, 11 Dec 1996 13:11:40 -0500

Martha Haynes writes:
> Dear Alan,
>
> I am leaving tomorrow (Thurs) at 1:30pm for the KPNO Users'
> Committee meeting. If you get the draft done by noon tomorrow,
> I can take it with me (in whatever form it is in then). Otherwise,
> I will not get it until Monday. Just so you know...
>
> Martha
>

Thanks, even more incentive for me!

A.

From: abridle (Alan Bridle)
To: Martha Haynes <haynes@astrosun.tn.cornell.edu>
Subject: Re: NRAO Large Proposals Committee - phone meeting
Date: Wed, 11 Dec 1996 18:49:09 -0500

Martha Haynes writes:

> Dear Alan,
>
> I am leaving tomorrow (Thurs) at 1:30pm for the KPNO Users'
> Committee meeting. If you get the draft done by noon tomorrow,
> I can take it with me (in whatever form it is in then). Otherwise,
> I will not get it until Monday. Just so you know...
>
> Martha
>

Martha, here is the version I have as of heading-home time this evening (Wednesday). I'm going to take it home and read it through before sending it off to the others tomorrow a.m. but just to make sure you have a copy to (optionally) spoil your plane trip with here it comes now:

--------------------------------%<------------------------------

This is a very rough first draft of a possible answer from the Committee to Paul's questions. It is based on, and in places directly hacked together from, our E-mail discussion to date, plus occasional bursts of stream-of-consciousness interpretation on my part. It will definitely need extensive re-working, but I hope it will serve as an adequate basis for our initial phone conference.

I have tried to pull together a recommendation at the end of each section. It may be a good idea to start with that before reading the section, as the first-order question in each area is surely: is this the direction we really intend to go in? I suggest that the final format would have a summary of these recommendations at the front.

There is a "grab-bag" section at the end in which I have simply dumped items that I tvipped over in the E-mail and which we need either to expand into their own sections or to integrate with the others (or to dismiss entirely.)

There is also an Appendix containing Martha's replication of the KPNO instructions for "long-term" and "key project" proposal submissions. I have not yet used either of these terms to describing the proposals that might "volunteer" for large-project review. So there is presently no connection between this Appendix and the rest of the draft. Whether and how we should use it and/or the KPNO terminology should be on our agenda, at this point I am simply keeping a useful piece of text loosely attached to the rest.

Please look this over and use it to suggest agenda items to me for the

phone meeting next week. I will try to set the time and date for that just as soon as I hear from at least one of Jackie Hewitt, Fred Lo, and Don Backer!

********** VERY ROUGH VERY FIRST DRAFT **********

1. Is a "large proposal" policy needed at the NRAO?.

We believe that it is. Our reasons for concluding this are twofold:

(a) Large projects will (by any definition) be ones that impact other NRAO users' work to an unusual extent. The NRAO should therefore have a process that can reassure its users that the few large projects which do get scheduled have met unusual standards of scientific importance and of uniqueness, and also that they are of finite length. To the extent that the constraints imposed on 'standard' proposals by the VLA surveys have been widely accepted, there is consensus not only that these surveys are scientifically important but also that they could only have been done with the VLA. It is also important that the proposed disruption to other work ends eventually. We believe that it the NRAO must be able to show that it is carefully balancing the scientific worth of large projects against their impact on smaller ones when making future decisions about scheduling large projects. We suggest that a key ingredient in this will be a more extensive "skeptical review" process for proposals that are above a certain threshold.

(b) Most large projects will also generate databases that are of interest to a large community of astronomers. It is therefore appropriate to seek that community's advice about the scope of a large project, about its data selection parameters, about data reduction methods, and about archiving and dissemination plans. A further, and possibly ongoing, "expert review" of large projects may therefore also be needed once they have passed initial "skeptical review". We also note that some large projects are merely long projects (e.g. large sample studies in which the individual observations are not especially challenging) but others may push the limits of the instrumentation in sensitivity, data rate or data volume, and thus benefit from expert technical advice from an expanded community at an early stage of planning.

We do not see how the NRAO could address either of the above areas satisfactorily simply by extending the normal proposal review process to projects of arbitrarily large scope. We do not see how to measure the breadth of support for large proposals, or to satisfy the user community that their observing parameters have been optimized, without having a threshold above which proposals get extra scrutiny initially. Thus some new policy is needed.

It also seems clear that no single-forum review could be well suited to addressing all of the issues summarized above. Our proposal for a new policy has several options to deal with this.

The first question in the charge to the Committee also asked us whether, if a new policy is needed, it should be written down and disseminated. It will be important to strike an appropriate balance between (a) clarifying the observatory's future intentions about large projects and (b) specifying a policy in detail now that proves to be ill-suited to particular cases in future, or which is unnecessarily burdensome either to proposers or reviewers. We therefore seek an approach that has built-in flexibility, but which can and should be written down and disseminated to the user community.

RECOMMENDATION

The NRAO should have a written, disseminated, policy for the treatment of large proposals whereby (a) such proposals will receive extra scientific scrutiny and (b) the time allocated to them will be balanced against the needs of the larger number of small proposals from other areas of astronomy. It is important that such a written policy be flexible enough to cover a wide range of proposal types and circumstances.

2. A threshold for an enhanced "skeptical review".

"Normal" proposals are reviewed by small specialized panels of discipline experts from outside the NRAO. A favorable review from within the discipline is clearly is a necessary, but we believe an insufficient, condition for scheduling a "large" proposal. A project large enough to constrain work in other areas of astronomy should also be asked to impress a bigger panel that includes some astronomers whose work would not directly benefit from the project's final database.

Such an initial review should ask (a) whether a large proposal has high scientific priority to warrant the displacement of normal work in other areas, and (b) whether the proposal can be done only on the NRAO telescope.

The best group to draw from when forming an expanded "skeptical review" panel for large proposals is the people who are already refereeing other discipline areas for that telescope.

We therefore suggest that any proposal larger than some threshold (in hours, discussed below) be reviewed first by a "skeptical review" panel that is a subset of the current referees, cutting across all sub-disciplines served by that telescope. This would allow some of the people who are judging small projects to weigh them against bigger projects that might use up all their time. It would allow big projects to be judged in the specific context of their impact on other work proposed for the telescope.

We note that this approach would be strongly preferred to the alternative of setting up a separate committee of "large proposal

reviewers" who were not currently participating in the normal process. Such a separate committee (a) might not have much work to do, but (b) would be less aware of the overall context of "normal science" with which a large proposal would compete. Under those circumstances, simply having a special review process for large proposals could generate pressure to have some of them scheduled. This would not be a desirable outcome.

****** Q. How big should the "skeptical review" panel be? **********

We suggest that the threshold for such an expanded initial review be set in an explicitly "fuzzy" range of 200-300 hours of observing time. (300 hrs corresponds to projects that would require about 2 weeks of schedule time if done in one session.) We note that use of this criterion would have implicated about 1 project previously treated as "standard" at the VLA since 1990, and 5 previously treated as "standard" at the VLBA, according to statistics from Barry Clark, in addition to the two VLA surveys. The number of proposals that would be implicated is neither large nor a strong function of where the threshold would be set in the few-hundred-hour range (for these telescopes). Our main reason for suggesting that the threshold be stated as "fuzzy", implying that discretion will be exercised by the NRAO, is to discourage lawyerly attempts to avoid the skeptical review process simply by making proposals that fall infinitesimally below it.

Some projects of 200-300 hr size have already been done at the VLA and VLBA via series of consecutive proposals for 100 or so hours of time. Such a sequence of proposals in effect provides a set of "progress reports" throughout a moderate-sized project, via the normal refereeing process. There is no reason to discourage this alternative. It effectively amounts to an ongoing, but not guaranteed, grant of observing time on the basis of progress being demonstrated, and on a time scale set by the proposers' actual work on the project rather than in advance.

The consecutive-proposal process is not well-suited to all moderate-sized projects, however. Data subsets or pilot projects do not always produce exciting science, and doing a project piecemeal in such a way as to maximize short-term science at proposal deadlines may distort overall strategy. At the VLA, this approach has also fragmented the observations of some source samples across several different observing groups and proposals, reducing their long-term utility to the community, which would be better served by a more co-ordinated approach. (The 3CR continuum sources, and galactic water vapor masers are particular cases known to us.)

We therefore believe that proposers should be invited to volunteer projects of moderate size (100-300 hrs) also for the enhanced "skeptical review". This might be a way to ensure that such a moderate-sized proposal indeed obtains all the time that it needs (regardless of graduate student involvement or the status of intermediate results). There may also be advantages to proposers in obtaining grants from funding agencies if a project has received such an extra review within the NRAO competition).

RECOMMENDATION.

All projects requesting more than 300 hours of observing time, and, at the NRAO Director's discretion, some projects asking for less than this, should intially be evaluated by an expanded "skeptical review" panel of referees for the telescope concerned. This panel should be drawn from the usual pool of proposal referees for the telescope. It should include all referees who normally review within the proposal's sub-discipline, and at least an equal number drawn from the other proposal categories used for that telescope. The goals of this initial evaluation are (1) to assess the scientific priority for the proposal in competition with all others in all sub-disciplines served by the telescope, and (2) to assess whether the telescope is uniquely suited to the project. Any proposal evaluated by such a panel must be for a definite total duration, beyond which it will not be continued without re-evaluation. Proposers of "moderate-sized" (<300-hr) projects may also volunteer their own proposals for consideration in this way.

3. "Expert Review" - Ongoing Monitoring and Supervision.

For many, but not necessarily all, large projects, further review by more narrowly-focussed expert panels is also appropriate.

The impact on other users also requires us to ensure that the observing techniques and time allocations for large proposals are optimized both to the science and to the instrument, and that the final databases are made available promptly in scientifically robust form.

The main areas in which further expert review may be appropriate are:

a) Sample definition and selection, sensitivity limits, extent of sky coverage: i.e., essentially scientific areas where some consensus, or at least advice, from across the astronomical sub-discipline is appropriate for a large proposal.

b) "Up front" advice about optimal data acquisition strategies, organization of observing time, essentially on-line issues which may have a strong engineering or operational component. In some cases, it may be important to require a pilot or demonstration project to prove an observational technique before going ahead with the full project as proposed.

c) To monitor project progress. Ongoing review may be appropriate for some projects, particularly those whose data volume presents a major computing challenge. If such review is required, the supervision should be "strong".s By this we mean that the review panel must be able to recommend withholding later instalments of observing time if the project does not meet data-processing targets (quality and speed of the data analysis) in a timely way. Such a panel will in effect re-referee the project while it is in progress, and could recommend no further time allocation if agreed data-processing milestones were not

met.

d) Construction of an accessible public data archive. If a big community's observing time is "taxed" to make room for large projects, then that community should share the benefits of the final database quickly. This implies a review process aimed at ensuring prompt access to calibrated data whose quality are uniform and well-understood. This would typically require a review panel with a mix of scientific and computer expertise.

It is clear that these areas would require review groups different in composition from the initial "skeptical review" panel for the proposal, which should be cross-disciplinary and made up from members of the existing (external to NRAO) referee pool. The expert review panels would however benefit by including people who are not currently acting as NRAO referees, including NRAO scientific and technical staff with special knowledge about the telescope, the science, or data processing relevant to the proposal. They also need to be ongoing, and might use a range of formats, including telephone conferences, face-to-face meetings or workshops, that are not traditionally used for proposal refereeing at the NRAO.

We emphasize that not all "large" projects should be subjected to all of the above-listed forms of ongoing monitoring and supervision. While it may be true that all proposals above some very large (1000-hour ?) level, should have some ongoing supervision for the benefit of the whole community, there will be grey areas within which only a subset of the above procedures is necessary. The style and extent of ongoing supervision of a large project will have to be determined on a case-by-case basis. The policy that is needed now should set up a process capable of making this case-by-case determination, and not be an attempt to anticipate all the appropriate criteria in advance.

We also do not think that length of observing time alone is a criterion for ongoing expert review. The technical "degree of difficulty" of the project is clearly a significant factor. For example, proposals that are straightforward in terms of observing technique and data analysis, but which require 'simply' large amounts of time, might be selected on the basis of a favorable evaluation of the skeptical review committee. But a proposal which challenges the current technical frontier (Zeeman work on the GBT, a dramatic new pulsar search strategy) and which requires an extensive block of time should surely be reviewed by a group with a strong technical background before being scheduled.

We therefore suggest that when a "skeptical review" panel for a proposal assigns the proposal enough scientific priority that it will be considered for scheduling, they should also recommend whether the proposal should be subject to further expert review, and if so in what areas. The final structure of the ongoing review process should be decided at the discretion of the NRAO Director, but it is important that it begin with input from representatives across the whole astronomical community served by the telescope involved.

If the telescope is one on which dynamic scheduling is used, the "skeptical review" panel might also be asked to comment on whether the proposal is appropriate for use as part of the scheduling strategy. (seetgrab-bag at end).

(We note that in discussing this area, we were guided by the recent experience with the two VLA surveys. We understand that there were significant technical issues that had to be settled for each of the surveys, primarily in the area of data analysis. We also believe that the community relied on the survey oversight committee(s) to ensure that the data were made readily available to the public in a timely manner. Perhaps this would have occurred anyway, but we believe that it was helpful to have a mechanism in place to strengthen the resolve of the PI's!)

RECOMMENDATION

All proposals that are given high scientific priority on initial "skeptical review" should also be considered for further "expert" review in four main areas: scientific issues of observing strategy, technical issues of observing strategy and data acquisition, ongoing review of project progress, and public availability of a calibrated data archive. Not all proposals will require further review in all of these areas. The "skeptical review" panel should recommend the extent and style of such ongoing reviews for any highly-rated project. The final arrangements for such ongoing "expert review" would however be made at the discretion of the NRAO Director on a case-by-case basis.

4. An over-all upper limit to the time available for large projects?

The committee recognized that there must be some upper limit, or one could get into the situation where all the time is given to a few large projects. This would not be the appropriate asymptote for a national facility with a large and diverse user base!

It is however difficult to decide what the upper limits should be. They should likely vary from telescope to telescope, and with the time since commissioning of major instruments at any individual telescope.

For heavily over-subscribed facilities such as the VLA, VLBA, and GBT (presumably) lower upper limits would be appropriate for large programs than at instruments such as the former 300-ft, the 140-ft and the Green Bank interferometer in the years before shutdown. Under those circumstances, survey roles were appropriate not only for scientific reasons, but also to minimize operational costs.

The committee generally agreed that their discomfort threshold for displacement of small programs by a few large ones lay in the range from 1/6 to 1/3 of the overall observing time, for an instrument in the prime of its career. It also noted that projects that would take time from the "popular" LST ranges for galactic and extragalactic investigations, would impose more severe constraints than those with

LST flexibility.

But we do not wish to recommend upper limits now for any particular telescope, because such a recommendation could easily become inappropriate through instrumental developments, changes in proposal pressure reflecting new emphasis or discoveries in an astronomical sub-discipline, or astronomical "surprises" such as a nearby supernova.

Instead, we suggest that the assessment of appropriate upper limits for large proposals at each telescope should be an ongoing process. For each telescope, it should be entrusted to a cross-disciplinary group of scientists with access to the statistics of observing time requests from, and an assessment of the scientific vigor in, the different sub-disciplines that generate proposal demand on each telescope. This specification matches well that of the "cross-disciplinary" part of the "skeptical review" panel described earlier.

We therefore suggest that when proposal referees are appointed for each telescope, a subset is also asked to participate in a Large Proposal Panel for that telescope. This Panel would be asked to advise annually about appropriate upper limits to large-proposal observing time for the telescope. In making such an assessment, the Panel might advise the telescope scheduling committee about how to balance of observing time between different sub-disciplines for proposals of all sizes.

(The "skeptical review" panel for any given large proposal submitted to that telescope could then be the sum of the usual proposal referees for that proposal category and the Large Proposal Panel for the telescope.)

It is most important that such upper limits not be re-interpreted as quotas of time that "should" be filled by large proposals. High scientific priority based on the review of proposals initiated on the "open market" by user community should be the driver for assigning any time to a large proposal in competition with the rest of the proposal stream.

RECOMMENDATION

Upper limits should be set to the observing time for large projects at each telescope on an annual basis. These upper limits should be established on the recommendation of a Large Proposal Panel for each telescope, composed of one referee for each of the proposal categories used, and be based on their assessment of current and likely near-term pressure in all proposal categories at that telescope. Any policy statement should make it explicit that such uppper limits will not be interpreted as qutoas to be filled, however.

5. Announcements of Opportunity

The committee considered the question of whether the NRAO should explicitly solicit proposals for large projects via Announcements of Opportunity, either targeted to specific disciplines or to special deadlines other than those implied by the regular proposal process.

It was our unanimous opinion that little would be served by this approach. It may actually be undesirable because it would separate "opportunities" for making large project proposals from the regular proposal process. The existence of specific "opportunities" encourages the whole user community to think about large proposals simultaneously. As the NRAO-operated telescopes are ground-based and flexible in their capabilities, it is not clear what advantage would be gained. Our situation clearly differs from one in which AOs are used to establish the scientific program of a spacecraft instrument, which must be accomplished in a limited time frame. The AO approach would place some obligation on the NRAO to schedule some large projects in return for encouraging the the whole community to make proposals for them. It is undesirable to create any artificial imbalance between large proposals and the regular proposal process when the ultimate goal is to find an appropriate balance. We feel that scientific balance is most likely to be achieved in a framework in which the driver is the scientific interests of individual investigators, rather than ad hoc deadlines associated with AOs.

RECOMMENDATION

The NRAO should not make Announcements of Opportunity for the submission of large proposals. Large proposals should be submitted at the normal proposal deadlines, without special solicitation by the observatory.

6. Some details.

********** THESE ARE ALL POINTS THAT CAME UP IN E-MAIL BUT WHICH
********** NEED DISCUSSION ABOUT WHERE/IF THEY FIT IN

- o should the NRAO play any role in forming consortia around large proposals once they have submitted, e.g. to add expertise or data-processing capability not part of original proposal?

- o interaction with smaller proposals in the regular queue
  - do we need criteria for when smaller proposals should be embargoed because their results would be pre-empted by, or replicated by, a planned large project?
  - interacts with question of "research arena" guarantees to moderate-sized projects which "volunteer" for large-project review.

- o proposal format, size, etc. if intended for Large Proposal Review?

- o dynamic scheduling, e.g. low frequencies on the GBT; should large proposals be used as ingredients in the scheduling strategy?

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Appendix on the NOAO policy

Long-Term Status: KPNO accepts proposals for scientific programs which extend beyond a single semester. If you wish to apply for long-term status, check "yes" on the front page of the form and give tle details of your request (e.g. "six nights per semester for 4 semesters"). Long-term status may be granted to proposals for which a scientific result cannot be achieved without the full allocation of time.

Key Projects. KPNO encourages proposals for observing programs which seek to answer a significant scientific question of general interest and which require more than the usual allocation of time. Criteria for evaluating Key Projects are as follows. Is the program of high scientific merit? Is the subject of the proposal of general interest to the broader astronomical community? Is access to significant amounts of telescope time necessary to make progress on the scientific problem? Will KPNO telescope time comprise most of the observing for the project? Key Project proposals should also address how the large body of data collected can be made available to the community. If you wish to propose a Key Project, indicate "Key Project" on the front page, and give details in the place designated for "long-term" status. Describe also how smaller allocations of time would be used if the project is not accepted as a Key Project. Key Project proposals are permitted up to two pages of scientific justification.

From: "K. Y. Lo" <kyl@astro.uiuc.edu>
To: Alan Bridle <abridle@NRAO.EDU>
Cc: "K. Y. Lo" <kyl@astro.uiuc.edu>
Subject: Re: NRAO Large Proposals Committee - phone meeting
Date: Wed, 11 Dec 1996 19:28:14 -0600 (CST)

Dear Alan,

sorry for the delayed reply. I have been on the road.
I am leaving for the Far East Dec 16, so I am afraid I
will have to miss the conference call.

Cheers,
KYL

PS: Happy Holidays.

From: abridle (Alan Bridle)
To: "K. Y. Lo" <kyl@astro.uiuc.edu>
Subject: Re: NRAO Large Proposals Committee - phone meeting
Date: Thu, 12 Dec 1996 10:06:12 -0500

K. Y. Lo writes:
> Dear Alan,
>
> sorry for the delayed reply. I have been on the road.
> I am leaving for the Far East Dec 16, so I am afraid I
> will have to miss the conference call.
>
> Cheers,
> KYL
>
> PS: Happy Holidays.
>

Sorry about that, Fred, but have a great trip.

And happy holidays to you also!

A.

From: abridle (Alan Bridle)
To: Martha Haynes <haynes@astrosun.tn.cornell.edu>
Subject: Re: NRAO Large Proposals Committee - phone meeting
Date: Thu, 12 Dec 1996 10:52:03 -0500

Martha,

I was somewhat appalled by the incoherence of some of the English in the stream-of-consciousness draft that I sent you at the end of the day yesterday so I will be sending a (hopefully) somewhat clearer one out to the whole committee about an hour from now. If you do take the zeroth draft with you for reading in-transit please read it only for the sense of the recommendations and overall range of topics, there will already be quite a few changes to the English in the version that will await you when you get back. I have just heard from Fred that he is traveling next week and have not yet been able to contact either Jackie or Don B., so the timing of the phone conference will also appear while you are away.

Best wishes, Alan B.

From: Martha Haynes <haynes@astrosun.tn.cornell.edu>
To: abridle@NRAO.EDU
Subject: Re: NRAO Large Proposals Committee - phone meeting
Date: Thu, 12 Dec 1996 11:00:18 -0500

Hi Alan,

I do appreciate the fact that I received the
zeroth order draft - don't worry!

In fact, I will have plenty of other papers
to grade - 25 of them on "Dark Matter in the
Astrophysical Context" by students in my
class "Our Home in the Universe". Those should
surely make my flights memorable.

I won't be leaving until 1:30, so if you have the
next version done anytime before then, it will be
the one that goes with me.

Cheers,

Martha

From: dbacker@bkypsr2.berkeley.edu (don backer 415 campbell 510-642-5128)
To: abridle@NRAO.EDU
Subject: Large P
Date: Thu, 12 Dec 1996 12:14:42 -0800

Alan,

I am, and have been, on the road. I won't try ot read recent mails
until I return later next week.

Don

From: abridle (Alan Bridle)
To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu
Subject: NRAO Large Proposals Committee - draft
Date: Thu, 12 Dec 1996 15:19:41 -0500

This is a very rough draft of an answer from the L.P. Committee to Paul's questions. It is based on, and in places directly hacked together from, our E-mail discussion to date, plus some unilateral interpretation by me. It will definitely need extensive re-working, but I hope it will serve as an adequate basis for our initial phone conference.

I have drafted a "recommendation" at the end of each section and the first section simply restates these up front. The first-order question in each area is surely: is this recommendation going in the right direction?

There is a "grab-bag" section at the end in which I have simply dumped items that I tripped over in the E-mail and which we need either to expand into their own sections or to integrate with the others (or to dismiss entirely.)

There is also an Appendix containing Martha's replication of the KPNO instructions for "long-term" and "key project" proposal submissions. I have not yet used either of these terms to describe the proposals that might "volunteer" for large-project review. So there is presently no connection between this Appendix and the rest of the draft. Whether and how we should use it and/or the KPNO terminology should be on our agenda. At this point I am simply keeping a useful piece of text loosely attached to the rest.

Please look this over and use it to suggest agenda items to me for the phone meeting next week. I will try to set the time and date for that just as soon as I hear from at least one of Jackie Hewitt and Don Backer (Fred Lo, unfortunately, will be in the far east next week).

********** VERY ROUGH FIRST DRAFT **********

Summary of recommendations.

RECOMMENDATION 1.

The NRAO should have a written, disseminated, policy for the treatment of large proposals. It is important however that this written policy be flexible enough to cover a wide range of circumstances.

RECOMMENDATION 2.

All proposals that request more than 300 hours of observing time, and, at the NRAO Director's discretion, some requesting less time than this, should initially be evaluated by an expanded "skeptical review" panel. This panel should be drawn from the usual pool of proposal referees for the telescope concerned. It should include all referees who normally review the large proposal's sub-discipline, and at least an equal number of referees who normally review the other proposal categories for that telescope. This initial evaluation should assess (1) the scientific priority for the proposal in competition with all of the other astronomy that can be done by the telescope, and (2) whether the telescope is uniquely suited to the proposal. Any such large proposal must also be for a definite total duration, beyond which it would not be continued without re-evaluation. Proposers of "moderate-sized" (<300-hr) projects may also volunteer their proposals for such expanded "skeptical review", as a way to obtain a guarantee of observing time for a long-term project, or some priority for a project that might otherwise carried out in a more fragmented fashion.

RECOMMENDATION 3.

All proposals that are given high scientific priority on initial "skeptical review" should also be considered for further "expert" review in four main areas: scientific issues of observing strategy, technical issues of observing strategy and data acquisition, ongoing review of project progress, and public availability of a calibrated data archive. Not all proposals will require further review in all of these areas. The "skeptical review" panel should recommend the extent and style of such ongoing reviews for any highly-rated project. The final arrangements for such ongoing "expert review" would however be made at the discretion of the NRAO Director on a case-by-case basis.

RECOMMENDATION 4.

Upper limits should be set to the observing time for large projects at each telescope at such times as they are needed. In setting such limits, the observatory should seek the advice of a Large Proposal Panel for each telescope. This Panel would typically be composed of one referee from each of the sub-disciplines normally used as proposal categories at that telescope, so their advice could be based on an assessment of current, and likely near-term, proposal pressure at the telescope from all types of observation. Any policy statement about such upper limits should emphasize they will not be interpreted as quotas to be filled with large projects, however.

RECOMMENDATION 5.

The NRAO should not make Announcements of Opportunity for the submission of large proposals. Large proposals should be submitted at the normal

proposal deadlines, without special solicitation by the observatory.

******** MAIN REPORT **********

1. Is a "large proposal" policy needed at the NRAO?.

We believe that it is. Our reasons for concluding this are twofold:

(a) Large projects will (by any definition) be ones that impact other NRAO users' work to an unusual extent. The NRAO should therefore have a process that can reassure its users that the few large projects which do get scheduled have met unusual standards of scientific importance and of uniqueness, and also that they are of finite length. To the extent that the constraints imposed on 'standard' proposals by the VLA surveys have been widely accepted, there is consensus not only that these surveys are scientifically important but also that they could only have been done with the VLA. It is also important that the proposed disruption to other work ends eventually. We believe that it the NRAO must be able to show that it is carefully balancing the scientific worth of large projects against their impact on smaller ones when making future decisions about scheduling large projects. We suggest that a key ingredient in this will be a more extensive "skeptical review" process for proposals that are above a certain threshold.

(b) Most large projects will also generate databases that are of interest to a large community of astronomers. It is therefore appropriate to seek that community's advice about the scope of a large project, about its data selection parameters, about data reduction methods, and about archiving and dissemination plans. A further, and possibly ongoing, "expert review" of large projects may therefore also be needed once they have passed initial "skeptical review". We also note that some large projects are merely long projects (e.g. large sample studies in which the individual observations are not especially challenging) but others may push the limits of the instrumentation in sensitivity, data rate or data volume, and thus benefit from expert technical advice from an expanded community at an early stage of planning.

We do not see how the NRAO could address either of the above areas satisfactorily simply by extending the normal proposal review process to projects of arbitrarily large scope. We do not see how to measure the breadth of support for large proposals, or to satisfy the user community that their observing parameters have been optimized, without having a threshold above which proposals get extra scrutiny initially. Thus some new policy is needed.

It also seems clear that no single-forum review could be well suited to addressing all of the issues summarized above. Our proposal for a new policy has several options to deal with this.

The first question in the charge to the Committee also asked us whether, if a new policy is needed, it should be written down and disseminated. It will be important to strike an appropriate balance between (a) clarifying the observatory's future intentions about large projects and (b) specifying a policy in detail now that proves to be ill-suited to particular cases in future, or which is unnecessarily burdensome either to proposers or reviewers. We therefore seek an approach that has built-in flexibility, but which can and should be written down and disseminated to the user community.

RECOMMENDATION 1

The NRAO should have a written, disseminated, policy for the treatment of large proposals. It is important however that this written policy be flexible enough to cover a wide range of circumstances.

2. A threshold for an enhanced "skeptical review".

"Normal" proposals are reviewed by small specialized panels of discipline experts from outside the NRAO. A favorable review from within the discipline is a necessary, but we believe an insufficient, condition for scheduling a "large" proposal. A project large enough to constrain work in other areas of astronomy significantly should also be asked to impress a bigger panel that includes some astronomers whose work would not directly benefit from the project's final database.

Such an initial review should ask (a) whether a large proposal has high scientific priority to warrant the displacement of normal work in other areas, and (b) whether the proposal can be done only on the NRAO telescope.

The best group to draw from when forming an expanded "skeptical review" panel for large proposals is the people who are already refereeing other discipline areas for that telescope.

We therefore suggest that any proposal exceeding some threshold (in hours, discussed quantitatively below) be reviewed first by a "skeptical review" panel drawn from the pool of proposal referees for that telescope but representing all major astronomical sub-disciplines served by the telescope. This would allow some of the same referees who are judging smaller projects to weigh them against any large projects that might use up all their time. It would allow large projects to be judged in the specific context of their impact on the other work currently proposed for the telescope.

We strongly prefer this approach to one that would establish a standing committee of "large proposal reviewers" who were not currently participating in the normal proposal-review process. Such a separate committee would be less aware of the overall scientific context with which large proposal(s) would compete. Also, simply

setting up a separate process for reviewing large proposals could generate pressure to have some scheduled. We think this is not desirable.

We suggest that the threshold for an expanded initial review should be set in an explicitly "fuzzy" range of 200-300 hours of observing time. (300 hrs corresponds to about 2 weeks of schedule time if done in one session.) Since 1990, use of this criterion to trigger additional review would have affected only about one project previously treated as "standard" at the VLA, plus the two VLA surveys. It would have affected five previously treated as "standard" at the VLBA. (These statements are based on statistics for the VLA and VLBA furnished to us by Barry Clark.) The number of past proposals that would have been exposed to "skeptical review" remains modest wherever the threshold could be set in the few-hundred-hour range (for these telescopes). Our main reason for suggesting a "fuzzy" threshold for the initial "skeptical review", i.e. an explicit statement that discretion will be exercised by the NRAO in applying the criterion, is to discourage attempts to avoid the orocess by tailoring proposals to be just under a strict threshold.

Some projects of 200-300 hr size have already been done at the VLA and VLBA via series of consecutive proposals for 100 or so hours of time. Such a sequence of proposals in effect provides a way to carry out a moderate-sized project through the normal channels. We see no reason to discourage this. It amounts to an ongoing, but not guaranteed, grane of observing time on the basis of demonstrable progress, with the time scale being set by the proposers' actual success with, and capacity for, the project.

The consecutive-proposal process is not well-suited to all moderate-sized projects, however. Data subsets or pilot projects do not always produce good science, and doing a project piecemeal in such a way as to maximize short-term "excitement" at proposal deadlines may distort the overall strategy of a moderate-scale investigation. Some VLA observations of source samples that interest a wide community have been fragmented into small proposals carried out by different groups. The resulting loss of homogeneity limits the long-term benefit to the community, which would be better served by an approach based on a small number of moderate-sized and well-co-ordinated proposals rather than a large number of small, independent ones. (VLA observations of the 3CR continuum sources, and of galactic water vapor masers are particular examples of this known to the committee.)

We therefore see some merit in inviting proposers to volunteer projects of moderate size (100-300 hrs) for the enhanced "skeptical review". This might be a way to ensure that moderate-sized proposals do indeed obtain all the time that they need (regardless of graduate student involvement or the status of intermediate results), and thus to encourage attempts to produce homogeneous, moderate-sized databases of benefit to a wider community. (Successful passage of a proposal through a more critical review process at the NRAO might also enhance its chances of attracting funds from granting agencies, so PI's are not without incentives to "volunteer" for such review!)

RECOMMENDATION 2.

All proposals that request more than 300 hours of observing time, and, at the NRAO Director's discretion, some requesting less time than this, should initially be evaluated by an expanded "skeptical review" panel. This panel should be drawn from the usual pool of proposal referees for the telescope concerned. It should include all referees who normally review the large proposal's sub-discipline, and at least an equal number of referees who normally review the other proposal categories for that telescope. This initial evaluation should assess (1) the scientific priority for the proposal in competition with all of the other astronomy that can be done by the telescope, and (2) whether the telescope is uniquely suited to the proposal. Any such large proposal must also be for a definite total duration, beyond which it would not be continued without re-evaluation. Proposers of "moderate-sized" (<300-hr) projects may also volunteer their proposals for such expanded "skeptical review", as a way to obtain a guarantee of observing time for a long-term project, or some priority for a project that might otherwise carried out in a more fragmented fashion.

****** Q. How big should the "skeptical review" panel be? **********
*** We have not discussed this yet at level I've winged it here ***

3. "Expert Review" - Ongoing Monitoring and Supervision.

For many, but not necessarily all, large projects, further review by more narrowly-focussed expert panels is also appropriate before they are scheduled.

The impact of large proposals on other NRAO users also requires us to ensure that their observing techniques and time allocations are optimized both to the science and to the telescope involved, and that the final databases are made available promptly and in scientifically robust forms.

The main areas in which further expert review may be appropriate before a project is actually scheduled are:

a) "Up front" scientific issues: sample definition and selection, sensitivity limits, extent of sky coverage. These are areas where it is appropriate to show that some consensus has been achieved , or at least that advice has been obtained, from across the astronomical sub-discipline most concerned with the proposal.

b) "Up front" technical issues: optimal data acquisition strategies, organization of observing time, instrumental limitations or other on-line issues which may have a strong engineering or operational component. In some cases, it may be important to require a pilot or demonstration project to prove an observational technique before going

ahead with the project as initially proposed. This area may require review by a group that involves scientists, engineers familiar with the instruments, and telescope operations staff.

Ongoing review of a project after it has been started may be appropriate to monitor

a) Data-processing progress. Ongoing review may particularly appropriate for projects whose data volume presents a major computing challenge. If such review is required, the supervision should be "strong". By this we mean that the review panel must be able to recommend withholding later instalments of observing time if the project does not meet data-processing targets (quality and speed of the data analysis) in a timely way. Such a panel will in effect re-referee the project while it is in progress, and could recommend no further time allocation if agreed data-processing milestones were not met.

b) Construction of an accessible public data archive. If a big community's observing time is "taxed" to make room for large projects, then that community should share the benefits of the final database quickly. This implies a review process aimed at ensuring prompt access to calibrated data whose quality are uniform and well-understood. This would typically require a review panel with a mix of scientific and computer expertise.

To the extent that any of these issues apply to a particular large proposal, they imply review by groups different in composition from the initial "skeptical review" panel. Unlike this panel, which should be cross-disciplinary and is probably best drawn from the existing (external to NRAO) referee pool, the "expert review" panels would benefit by including people who are not currently acting as NRAO referees. They should include NRAO scientific and technical staff with special knowledge about the telescope, the science, or data processing relevant to the proposal. They also need to be ongoing, and might use a range of formats, including telephone conferences, face-to-face meetings or workshops, that are not traditionally used for proposal refereeing at the NRAO.

We emphasize that not all "large" projects should need exposure to all of the above forms of ongoing monitoring and supervision. It is likely that all projects above some very large (1000-hour ?) threshold should have some ongoing supervision by an ad hoc "expert panel". But length of observing time alone is not the only criterion for whether ongoing expert review is necessary. The technical "degree of difficulty" of the project is clearly significant. For example, proposals that are straightforward in terms of observing technique and data analysis, but which require 'simply' large amounts of time, might be selected on the basis of a favorable evaluation of the skeptical review committee. But a proposal which challenges the current technical frontier (Zeeman work on the GBT, a dramatic new pulsar search strategy) and which requires an extensive block of time should surely be reviewed by a group with a strong technical background before being scheduled.

The key issue is that the style and extent of ongoing supervision of large projects should be determined on a case-by-case basis. Any policy that is written down now should simply define a process that is flexible enough to make this case-by-case determination. It should not try to anticipate all of the possible supervisory issues in advance.

We therefore suggest that when a "skeptical review" panel for a proposal assigns it high scientific priority, they should also recommend whether the proposal should be subject to further expert review, and if so in what areas. The scope and style of any further review process should however be decided by the NRAO Director. with advice from any other appropriate sources. It is important that the process begin with input from representatives of the whole astronomical community served by the telescope involved, but the "skeptical review" panel should neither be expected to, or expect to, specify the entire subsequent review process.

If the telescope is one on which dynamic scheduling is used, the "skeptical review" panel might also be asked to comment on whether the proposal is appropriate for use as part of that scheduling strategy. (***** see "grab-bag" item at the end, we should discuss eventually but probably not yet ******).

(We note parenthetically that in discussing this area, we were guided by the recent experience with the two VLA surveys. We understand that there were significant technical issues that had to be settled for each of the surveys, primarily in the area of data analysis. We also believe that the community relied on the survey oversight committee(s) to ensure that the data were made readily available to the public in a timely manner. Perhaps this would have occurred anyway, but we believe that it was helpful to have a mechanism in place to strengthen the resolve of the PI's!)

RECOMMENDATION 3.

All proposals that are given high scientific priority on initial "skeptical review" should also be considered for further "expert" review in four main areas: scientific issues of observing strategy, technical issues of observing strategy and data acquisition, ongoing review of project progress, and public availability of a calibrated data archive. Not all proposals will require further review in all of these areas. The "skeptical review" panel should recommend the extent and style of such ongoing reviews for any highly-rated project. The final arrangements for such ongoing "expert review" would however be made at the discretion of the NRAO Director on a case-by-case basis.

4. Should an over-all upper limit be set to the time available for large projects?

The committee agrees that there must indeed be some upper limit, or

one could get into the situation where all the time is given to a few large projects. This would be an inappropriate asymptote for a national facility with a large and diverse user base!

It is not easy to quantify what the limits should be, however. We should expect them to vary from telescope to telescope, and with time at any given telescope, just as the overall proposal pressures vary in response to major changes in instrumentation, to discipline-wide shifts in astronomical emphasis, or to astronomical transients such as supernovae and comets.

For the more heavily over-subscribed facilities such as the VLA, VLBA, and GBT (presumably) lower upper limits would be appropriate than at instruments such as the former 300-ft, the 140-ft and the Green Bank interferometer in the years before their shutdown. In the later years of a telescope's operation, large-scale survey roles become attractive for operational, as well as scientific, reasons. (Simplifying telescope schedules and minimizing equipment changes are often good operational strategies as a facility ages).

The committee generally agreed that their discomfort threshold for displacement of small programs lay in the range from 1/6 to 1/3 of the total observing time being devoted to large proposals, for an instrument in the prime of its career. It also noted that large projects that would take time from the "popular" LST ranges for galactic and extragalactic work impose more severe constraints than those with LST flexibility.

But we do not wish to specify upper limits for any particular telescope as part of this report. Rather, we wish to recommend a specific way to obtain such an assessment for any telescope at the time that it is needed.

The best group to advise about the upper limit for a particular telescope and time would be a cross-disciplinary group of scientists with access to the statistics of observing time requests from, and an assessment of the scientific vigor in, the different sub-disciplines that generate proposal demand at that telescope. This specification is close to that of the "cross-disciplinary" part of the "skeptical review" panel described earlier.

We therefore suggest that when proposal referees are appointed for each telescope, a subset be asked to participate in a Large Proposal Panel for that telescope. This Panel would be asked to advise about appropriate upper limits to large-proposal observing time for the telescope whenever such an assessment was actually needed. In doing so, the Panel would also have to consider how to balance observing time at that telescope between the different sub-disciplines for proposals of all sizes. It would be useful for that advice to be communicated to the telescope scheduling committee when a large proposal was in progress.

(The "skeptical review" panel for any given large proposal submitted to that telescope could then be the sum of the usual proposal referees for that proposal category and the Large Proposal Panel

for the telescope.)

It is most important that any advice about upper limits to the time that should be devoted to large proposals not be re-interpreted as quotas of time that "should" be filled by large proposals. High scientific priority based on reviewing proposals that were initiated on the "open market" by users should community should be the driver for assigning any time to a large proposal in competition with the rest of the proposal stream.

RECOMMENDATION

Upper limits should be set to the observing time for large projects at each telescope at such times as they are needed. In setting such limits, the observatory should seek the advice of a Large Proposal Panel for each telescope. This Panel would typically be composed of one referee from each of the sub-disciplines normally used as proposal categories at that telescope, so their advice could be based on an assessment of current, and likely near-term, proposal pressure at the telescope from all types of observation. Any policy statement about such upper limits should emphasize they will not be interpreted as quotas to be filled with large projects, however.

5. Announcements of Opportunity

The committee considered whether the NRAO should explicitly solicit proposals for large projects via Announcements of Opportunity, either targeted to specific disciplines or to special deadlines (other than those of the regular proposal process.)

It was our unanimous opinion that such an approach would be undesirable. It would separate "opportunities" for making large project proposals from the regular proposal process, whereas we see merit in keeping the process for large and small proposals well-coupled, It is also hard to see what benefit would come by encouraging the whole user community to think about large proposals simultaneously. The NRAO-operated telescopes are ground-based and flexible in their capabilities, so operational and planning considerations differ greatly from those needed to establish the scientific program of space-borne instruments, for example. The AO approach would however place some obligation on the NRAO to schedule some large projects after a period in which it had encouraged the whole user community to make proposals for them.

It is particularly undesirable to thus create an artificial imbalance between the pressure for large and regular proposals when our ultimate goal is to find an appropriate balance. We feel that scientific balance is most likely to be achieved through a proposal process driven mainly by the scientific interests of individual investigators, rather than by ad hoc deadlines.

RECOMMENDATION

The NRAO should not make Announcements of Opportunity for the submission of large proposals. Large proposals should be submitted at the normal proposal deadlines, without special solicitation by thi observatory.

6. Some details.

********** THESE ARE ALL POINTS THAT CAME UP IN E-MAIL BUT WHICH
********** NEED DISCUSSION ABOUT WHERE/IF THEY FIT IN

- o should the NRAO play any role in forming consortia around large proposals once they have submitted, e.g. to add expertise or data-processing capability not part of original proposal?

- o interaction with smaller proposals in the regular queue
  - do we need criteria for when smaller proposals should be embargoed because their results would be pre-empted by, or replicated by, a planned large project?
  - interacts with question of "research arena" guarantees to moderate-sized projects which "volunteer" for large-project review.

- o proposal format, size, etc. if intended for Large Proposal Review?

- o dynamic scheduling, e.g. low frequencies on the GBT; should large proposals be used as ingredients in the scheduling strategy?

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Appendix on the NOAO policy

Long-Term Status: KPNO accepts proposals for scientific programs which extend beyond a single semester. If you wish to apply for long-term status, check "yes" on the front page of the form and give the details of your request (e.g. "six nights per semester for 4 semesters"). Long-term status may be granted to proposals for which a scientific result cannot be achieved without the full allocation of time.

Key Projects. KPNO encourages proposals for observing programs which seek to answer a significant scientific question of general interest and which require more than the usual allocation of time. Criteria for evaluating Key Projects are as follows. Is the program of high scientific merit? Is the subject of the proposal of general interest to the broader astronomical community? Is access to significant amounts of telescope time necessary to make progress on the scientific problem? Will KPNO telescope time comprise most of the observing for the project? Key Project proposals should also address how the large body of data collected can be made available to the community. If you wish to propose a Key Project, indicate "Key Project" on the front

page, and give details in the place designated for "long-term" status. Describe also how smaller allocations of time would be used if the project is not accepted as a Key Project. Key Project proposals are permitted up to two pages of scientific justification.

From: "David Hogg" <dhogg@polaris.cv.nrao.edu>
To: abridle@polaris.cv.nrao.edu (Alan Bridle)
Cc: dhogg@polaris.cv.nrao.edu (David Hogg)
Subject: Your draft
Date: Fri, 13 Dec 1996 11:10:19 -0500 (EST)

Hi Alan,
I am reading the report, and writing comments as I go. This
is not the way I usually do it -- I read it once, and then
go back -- but I thought that I would try this way.

Please note that I am sending this only to you. If you think
the others would find it useful, then I would send an edited
version (this one is a stream-of-consciousness), but not
until a day before the meeting. I don't want it to seem as if
you and I are ganging up on them.

Now that I have read it all, I think that it is an excellent
start. In the main, it is well-written, and it covers the points
very nicely. I will be greatly surprised if it does not lead
to a rapid convergence.

First, I have looked at the summary of the recommendations.
Here are my initial reactions, with any detailed remarks to follow.

Recommendation 1. Fine.
Recommendation 2:
In the context of the relationship between surveys and
individual proposals I talked at length with Condon, about
which more is said later. He commented that for NVSS and FIRST
the 'skeptical review' was packed with persons philosophically
sympathetic to surveys, so that the committee endorsed both,
rather than choosing between them, and suggested to Condon
certain modifications to his proposal that increased his time
by 15%. The skeptical committee described here seems to be
potentially broader and therefore perhaps more balanced.
Recommendation 3. Fine.
Recommendation 4:
Now that I read it, I don't like it. Our report will suggest
a skeptical review committee, an expert review committee, and
a large proposal committee. That is just too much.
Recommendation 5. Fine

Now follow my comments on the main body of the report.

Recommendation 1 is fine. Paragraph (a) is especially well-written,
and makes the case for extraordinary review in a compelling way.

Recommendation 2. The rationale for a committee with broad interests
is defended well. However, it is heavily slanted to the VLA and VLBA.
Note that the 12-meter has but 5 referees, and the 140-ft only 4.
(I assume the number will grow for the GBT, but will surely be
less than the VLA). Thus I believe that we do need to consider
augmenting the current referees (for the single dishes) by persons

not currently serving. One good possibility would be to ask selected persons from the last two or three classes of retired referees to return for an ad hoc "skeptical review". They would still have a good feel for what the telescope is up to.

I agree with the discussion which endorses the consecutive-proposal process as a continued option. I also agree with the cautionary note sounded about trying to do all moderate-sized projects this way. But then the logic escapes me. Does a 100-hour project not get its 100 hours now, if the referees endorse it? Or a 200-hour one? If not, why not? And, if not, why should the results be different if the "skeptical review" says they should be. I am having trouble understanding why we encourage volunteering for skeptical review if the current system works. If it doesn't, we should either fix it, or lower the trigger value of hours for the skeptical review system.

Answer to the question of size: I suggest no fewer than 5 persons, and no more than seven persons. For really BIG projects, such as NVSS, it might be that one would want a widely representative group, but I hope the number could be held to seven.

By the way, the NVSS formally is 105 days of 24 hours. THAT is a big project.

Recommendation 3.
I think that you have covered the major issues here. I thought that the first page (up-front, and continuing through part b) was very well-written and will need little editing. The last page has the ideas but is a little rough.

I note parenthetically that Condon said a large proposer really should expect to forego most of his 'rights', ie. that data are not proprietary and must get out quickly, and he must expect that individual proposals will come along during the survey which will do selected objects or regions of the survey in a better (more sensitive; more spacings; more channels) way. I believe he would have no problems with this section at all.

Recommendation 4.
The first five paragraphs as written are fine, and describe the situation well. The reason that I am unhappy with this recommendation is that we are recommending yet another committee. The jaundiced critic will wonder if there are enough bodies to referee the NRAO telescopes and serve on the numberless committees. I guess that I do not believe that we will see many NVSS-sized projects, because they are so much effort for the proposers, and that the skeptical review can handle proposals that are somewhat smaller.

We probably need an advisory mechanism. But would it seem less bureaucratic to suggest:
1. the skeptical review committee be asked to opine on an upper limit.
2. if the skeptical review committee is uncomfortable doing this in a particular case, because of the size of the proposal or because of the makeup of the committee, it could advise the Director to convene an ad hoc panel, of a size and makeup of his choosing, to advise him on the maximum time to invest in the proposal.

Recommendation 6. Fine as written.

Other thoughts.

1. NOAO policy. We already offer long-term status on the single dishes, usually for one year. I do not see that the key project conceptdoffers us anything new in addition to what is discussed above, and suffers the disadvantage in my mind that the term is tainted by its use in NASA.
2. NRAO should in general not play a role in forming consortia. Obviously its staff persons could as individuals, to further their scientific goals.
3. My discussion with Jim Condon was very helpful in clarifying my ideas on the relationship between surveys and regular proposals. Basically, there is no overlap. The specific proposal will in general do a given object or region much more competently that can be done in the survey, or it will not get past the referees. The small proposer is under the gun to get his data out anyway, so the fact that a map of his object from the survey data might appear while he is working on his paper does not seem to be serious. In the same vein, the large proposal persons just have to expect that pieces of their survey will appear as a result of work done in little proposals by others, and they will have to be philosophical about it. So, there appears to be no need for our committee to do anything here.
4. We should not contaminate the wisdom of our insights with digressions into proposal formats.
5. It would be useful to have the skeptical review comment on the feasibility and the advisability of running a large proposal at least in part as a contingency program. I'll bet Condon would resist pretty vigorously, since he loses control. Maybe pulsar folks would be more willing.

From: abridle (Alan Bridle)
To: jhewitt@mit.edu
Subject: Telephone meeting
Date: Fri, 13 Dec 1996 11:24:37 -0500

Jackie,

Would you be able to join a telephone meeting of the
NRAO Large Proposal Committee if it was organised for
2 p.m. on Wednesday December 18th?

About 1 hr duration.

Please let me know a.s.a.p.,

TRhanks,

Alan B.

From: churchwell@madraf.astro.wisc.edu
To: abridle@NRAO.EDU
Subject: RE: NRAO Large Proposals Committee - phone meeting
Date: Fri, 13 Dec 1996 11:43:08 EST

Alan,
Next week I will be giving my final exam on Wed. from
2:45-4:45 PM CDT, otherwise I should be free.
E9

From: abridle (Alan Bridle)
To: churchwell@madraf.astro.wisc.edu
Subject: RE: NRAO Large Proposals Committee - phone meeting
Date: Fri, 13 Dec 1996 13:44:30 -0500

nchurchwell@madraf.astro.wisc.edu writes:
> Alan,
> Next week I will be giving my final exam on Wed. from
> 2:45-4:45 PM CDT, otherwise I should be free.
> Ed
>

Ed, does that mean that you do not have you usual class on the Thursday afternoon next week, the only slot that seems to be open for even the four of us who are not on theoroad (you, Martha, Dave and me) would be 2 pm EST Thursday afternoon (1 pm CST).

(My one other option was turning out to be exactly the time you just sent me for your final exam -- it's amazing how hard it is to thread people's schedules, even for a small subset like this one!)

Please let me know the answer as soon as you can.

Thanks, A.

From: abridle (Alan Bridle)
To: jhewitt@mit.edu
Subject: Telephone meeting, 2nd try
Date: Fri, 13 Dec 1996 14:38:39 -0500

Jackie,

The plan to have the NRAO Large Proposal Committee telephone meeting at 2 p.m. on Wednesday, December 18th has already gone down in flames. The most promising alternative now seems to be Thursday, December 19th at 2 p.m. Would this time work for you?

Alan B.

From: churchwell@madraf.astro.wisc.edu
To: abridle@NRAO.EDU
Subject: RE: NRAO Large Proposals Committee - phone meeting
Date: Fri, 13 Dec 1996 15:21:06 EST

Alan,
Yes next week is our final exam period and my normal schedule is suspended. I would be available next Thursday afternoon.

Ed

From: abridle (Alan Bridle)
To: Martha Haynes <haynes@astrosun.tn.cornell.edu>
Subject: Re: NRAO Large Proposals Committee - phone meeting
Date: Fri, 13 Dec 1996 17:15:30 -0500

Martha, it looks as if there are only four of us -
yourself, Ed Churchwell, Dave Hogg, and I who can
meet by phone next week (Don Backer and Fred Lo are
traveling, Jackie Hewitt has been incommunicado)
but I propose that we do so anyway because the next
step is simply to give me some more specifics to
work on for another draft. I will try to get the
whole group together by phone early in the New Year.

Even with just Dave's, my and Ed's constraints, plus
those of the conference hub, it narrows down to

Thursday, 19th December at 2 pm EST

as the clear first choice if that will work for you.

I have booked the hub for this time, hoping that it
is indeed the case. Please let me know a.s.a.p. if
you could not manage about an hour at that time.

I will send another message with an agenda and
the phone number to call.

Alan B.

From: abridle (Alan Bridle)
To: dhogg
Subject: Thursday, 19th Dec 2pm EST
Date: Fri, 13 Dec 1996 17:17:30 -0500

has been booked for the Large Proposal Committee meeting. I need E-confirmation of that from Martha but from an earlier message she sent me it should be o.k.; Ed Churchwell is o.k. Still nothing from jackie Hewitt. I will make an agenda on Monday.

A.

From: jhewitt@maggie.mit.edu
To: abridle@NRAO.EDU
Subject: Telephon emeeting
Date: Fri, 13 Dec 96 17:26:39 EST

Yes, Thursday the 19th at 2 is fine and I have blocked it out
on my calendar. I'm sorry I've been hard to reach -
end of term crunch - wallet stolen causing huge hassle,
and finally knocked out by flu. Just now coming back to life.
Let me go over all the email I've accumulated on large projects
and send you an email on my views.

Jackie

From: abridle (Alan Bridle)
To: jhewitt@maggie.mit.edu
Subject: Re: Telephon emeeting
Date: Mon, 16 Dec 1996 09:55:54 -0500

jhewitt@maggie.mit.edu writes:
 >
 > Yes, Thursday the 19th at 2 is fine and I have blocked it out
 > on my calendar. I'm sorry I've been hard to reach -
 > end of term crunch - wallet stolen causing huge hassle,
 > and finally knocked out by flu. Just now coming back to life.
 > Let me go over all the email I've accumulated on large projects
 > and send you an email on my views.
 >

Sorry to about such woes, and to be adding to them with "another committee meeting"! Will look forward to your input re the draft.

Hope life returns rapidly ....

A.

From: "David Hogg" <dhogg@polaris.cv.nrao.edu>
To: abridle@polaris.cv.nrao.edu (Alan Bridle)
Cc: dbacker@astron.Berkeley.EDU, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu,
kyl@sgr.astro.uiuc.edu, dhogg@polaris.cv.nrao.edu (David Hogg)
Subject: Some comments on your draft
Date: Tue, 17 Dec 1996 16:16:25 -0500 (EST)

Hi Alan,
I have read through your draft, I think that it is an excellent start. In the main, it is well-written, and it covers the points very nicely.

Here are my initial reactions to the recommendations themselves:
Recommendation 1. Fine.
Recommendation 2: Basically ok. However, I do have a number of comments, below.
Recommendation 3. Fine.
Recommendation 4: I have some concerns here. Our report will suggest a skeptical review committee, an expert review committee, and a large proposal committee. That seems like too much.
Recommendation 5. Fine

Now follow my comments on the main body of the report.

Recommendation 1 is fine. Paragraph (a) is especially well-written, and makes the case for extraordinary review in a compelling way.

Recommendation 2. The rationale for a committee with broad interests is defended well. However, it is heavily slanted to the VLA and VLBA. Note that the 12-meter has but 5 referees, and the 140-ft only 4. (I assume the number will grow for the GBT, but will surely be less than the VLA). Thus I believe that we do need to consider augmenting the current referees (for the single dishes) by persons not currently serving. One good possibility would be to ask selected persons from the last two or three classes of retired referees to return for an ad hoc "skeptical review". They would still have a good feel for what the telescope is up to.

In the context of the relationship between surveys and individual proposals I talked at length with Jim Condon. He commented that for NVSS and FIRST the 'skeptical review' had a number of persons philosophically sympathetic to surveys, so that the committee endorsed both, rather than choosing between them, and suggested to Condon certain modifications to his proposal that increased his time by 15%. The skeptical committee described here seems to be potentially broader and therefore perhaps more balanced.

I agree with the discussion which endorses the consecutive-proposal process as a continued option. I also agree with the cautionary note sounded about trying to do all moderate-sized projects this way. But then the logic escapes me. Does a 100-hour project not get its 100 hours now, if the referees endorse it? Or a 200-hour one? If not, why not? And, if not, why should the results be different if the "skeptical review" says they should be. I am having trouble understanding why

we encourage volunteering for skeptical review if the current system works. If it doesn't, we should either fix it, or lower the trigger value of hours for the skeptical review system.

Answer to the question of size: I suggest no fewer than 5 persons, and no more than seven persons. For really BIG projects, such as NVSS, it might be that one would want a widely representative group, but I hope the number could be held to seven.

By the way, the NVSS formally is 105 days of 24 hours. THAT is a big project.

Recommendation 3.
I think that you have covered the major issues here. I thought that the first page (up-front, and continuing through part b) was very well-written and will need little editing. The last page has the ideas but is a little rough.

I note parenthetically that Condon said a large proposer really should expect to forego most of his 'rights', ie. that data are not proprietary and must get out quickly, and he must expect that individual proposals will come along during the survey which will do selected objects or regions of the survey in a better (more sensitive; more spacings; more channels) way. e believe he would have no problems with this section at all.

Racommendation 4.
The first five paragraphs as written are fine, and describe the situation well. The reason that I am unhappy with this recommendation is that we are recommending yet another committee. The jaundiced critic will wonder if there are enough bodies to referee the NRAO telescopes and serve on the numberless committees. I guess that I do not believe that we will see many NVSS-sized projects, because they are so much effort for the proposers, and that the skeptical review can handle proposals that are somewhat smaller.

We probably need an advisory mechanism. But would it seem less bureaucratic to suggest:
1. the skeptical review committee be asked to opine on an upper limit.
2. if the skeptical review committee is uncomfortable doing this in a particular case, because of the size of the proposal or because of the makeup of the committee, it could advise the Director to convene an ad hoc panel, of a size and makeup of his choosing, to advise him on the maximum time to invest in the proposal.

Recommendation 6. Fine as written.

Other thoughts.
1. NOAO policy. We already offer long-term status on the single dishes, usually for one year. I do not see that the key project concept offers us anything new in addition to what is discussed above, and suffers the disadvantage in my mind that the term is tainted by its use in NASA.
2. NRAO should in general not play a role in forming consortia. Obviously its staff persons could as individuals, to further their scientific goals.
3. There seems to me to be little potential for conflict between surveys and regular proposals. The specific proposal will in general do a given object or region much more competently that can be done in the survey,

or it will not get past the referees. The small proposer is under the gun to get his data out anyway, so the fact that a map of his object from the survey data might appear while he is working on his paper does not seem to be serious. In the same vein, the large proposal persons just have to expect that pieces of their survey will appear as a result of work done in little proposals by others, and they will have to be philosophical about it. So, there appears to be no need for our committee to do anything here.

4. I do not think this committee needs to specify proposal formats.
5. It would be useful to have the skeptical review comment on the feasibility and the advisability of running a large proposal at least in part as a contingency program.

Regards,

Dave

From: Martha Haynes <haynes@astrosun.tn.cornell.edu>
To: abridle@NRAO.EDU
Subject: Re: NRAO Large Proposals Committee - phone meeting
Date: Tue, 17 Dec 1996 16:26:08 -0500

Dear Alan,

Thurs at 2 is fine with me.
I have just printed out your newest draft and will
read it tonight.
Martha

From: abridle (Alan Bridle)
To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu
Subject: NRAO Large Proposals Committee - message log
Date: Wed, 18 Dec 1996 09:52:46 -0500

To all committee members,

Here is my log of all E-mail received by me that was addressed to, or clearly intended for, all on the committee. This is just to check that nothing that should have reached you (or me) went "missing".

Items in {} were not in the subject lines as mailed but are added for clarification. "LPC" is shorthand for the committee name,

Please let me know a.s.a.p. if you did not receive any of these, or if you received any that are not on this list.

Alan B.

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DATE	FROM	SUBJECT
19 Sep	Alan Bridle	NRAO LPC {initial charge}
19 Sep	Fred Lo	Re: NRAO LP {acknowledgement}
20 Sep	Alan Bridle	NRAO LPC: questions
07 Oct	Alan Bridle	NRAO LPC: NRAO Newsletter
08 Oct	David Hogg	My thoughts on your questions
09 Oct	Alan Bridle	NRAO LPC - my views on first question
09 Oct	Alan Bridle	NRAO LPC - steps to thresholds
09 Oct	Alan Bridle	NRAO LPC - VLA/VLBA statistics
12 Oct	Ed Churchwell	NRAO LPC {thoughts on first question}
14 Oct	Don Backer	My thoughts
15 Oct	Alan Bridle	{forward of Don B's 14 Oct message to all}
15 Oct	Alan Bridle	NRAO LPC - message log
14 Nov	Alan Bridle	NRAO LPC - next step?
15 Nov	Fred Lo	Re: NRAO LPC - next step?
18 Nov	David Hogg	Large proposals - next step
19 Nov	Alan Bridle	NRAO LPC - from Marcello Felli
19 Nov	Martha Haynes	Big proposals {fwd by AHB}
25 Nov	Marcello Felli	NRAO LPC - more from M.Felli {fwd by AHB}
09 Dec	Alan Bridle	NRAO LPC - metting
09 Dec	Ed Churchwell	Re: NRAO LPC - meeting {fwd by AHB}
11 Dec	Alan Bridle	NRAO LPC - phone meeting
12 Dec	Alan Bridle	NRAO LPC - draft
17 Dec	David Hogg	Some comments on your draft
18 Dec	Alan Bridle	NRAO LPC - message log

From: abridle (Alan Bridle)
To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu
Subject: NRAO Large Proposals Committee - Dec.18 arrangements
Date: Wed, 18 Dec 1996 11:14:28 -0500

This is to confirm that a telephone conference meeting of the committee has been scheduled for

Thursday, December 19 at 2 p.m. EST
1 p.m. CST (Ed)

Fred Lo and Don Backer are both traveling, but everyone else has now confirmed that they can join this meeting..

Procedure: call 804-296-7082. When this number answers, you will automatically join the conference.

Notes:

I must activate the conference hub by placing the first call to it. I plan to do this at about 1.55 p.m. EST, so please do not call in mrre than a couple of minutes "early". (You should get a busy signal if you beat me to the line. If this happens, just hang up and try again soon.)

This is an automatic (un-moderated) system: people who are already on-line just hear a "click" when you join the conference. So please say something as soon as you connect!

The hub will remain active for all participants until I hang up my connection, so there are no complications for the phone hookup if anyone else "arrives late" or "leaves early".

Agenda:

I will mail one by the end of the workday today, or first thing tomorrow. Suggestions are welcome!

Alan B.

From: abridle (Alan Bridle)
To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu
Subject: NRAO Large Proposals Committee - agenda for Dec.19
Date: Wed, 18 Dec 1996 16:52:57 -0500

Agenda for Thursday, December 19 phone meeting at 2 p.m. EST
804-296-7082

0. Is the draft report a suitable starting-point? If so:

1. Do we agree with the intent of the draft recommendations?

(I want to focus first on their intent, rather than detailed wording, which may be better discussed by E-mail. I would hope to identify and discuss any points at which we disagree about principles, or major emphasis, in the draft. We could move on to word-smithing if it turns out that we do have general agreement, and have the time.)

I suggest that we go through the recommendations in their present order. At least two points will need some discussion:

- o relationship between "skeptical review" process and the setting of upper limits to observing time for all large proposals on any telescope: Dave fears that the draft calls for too many new committees. This was not my intent, so some clarification is needed here.

- o pros and cons of inviting proposers to "volunteer" for extra review. (Martha and Dave may have slightly discrepant ideas about this).

2. Are there important topics not yet addressed by this draft?
(We should identify and discuss, if so.)

3. How do we proceed from here?

My suggestion:

- o I redraft the report by January 1, attempting to shorten it some!

- o We have an opportunity for everyone to comment on the redraft by E-mail and perhaps a follow-up phone meeting about a week later (I suggest the window January 8-10 for this.)

- o We do not need a face-to-face meeting (unless some issues turnout to be unexpectedly contentious !)

- Target for a final report: 30 January.

4. Anything else that might benefit from live discussion?

Please E-mail or call me (804-296-0375) before the meeting if there is something that you feel should be added to this agenda but would not fit into this framework.

From: Martha Haynes <haynes@astrosun.tn.cornell.edu>
To: abridle@NRAO.EDU
Subject: Re: NRAO Large Proposals Committee - agenda for Dec.19
Date: Wed, 18 Dec 1996 17:09:04 -0500

Dear Alan,

I have been trying to finish final grades, so didn't give
Dave's response as much thought as I'd like. I will try to by
tomorrow. I think a phone call is a great idea at this point,
so we can share ideas on the spot.

One point I'd like to raise is concerns something Dave said about
the key projects. Do/Should we allow for the possibility of
a proposal to do the same science that requires use of more than
one telescope? For example, suppose someone discovers a high z
galaxy and wants to look for redshifted CO and possibly other
species. Some work might be done with the 12m (or MMA in the future)
but also the GBT and maybe even the VLA. Is/should it be
possible for someone to propose to do the whole body of work,
or are separate proposals required for each telescope? This of course
is only an anecdotal example, but I am not sure we have discussed
anything like this. (Excuse me if we did; I haven't looked back
through all the notes).

Anyway, I think your proposed agenda is on track, and that the
phone call should prove quite useful for us all.

Regards,

Martha

From: jhewitt@maggie.mit.edu
To: abridle@NRAO.EDU
Cc: jhewitt@maggie.mit.edu
Subject: comments on draft report
Date: Thu, 19 Dec 96 11:10:52 EST

Dear Alan -

I've been following the discussion with interest and I am sorry my commitments have prevented me from being more active before now. Let me bring in my views by commenting on the draft report.

1. I agree with the basic premise that large proposals require extra scrutiny and large being about 300 hours seems reasonable. The policy has to be disseminated if it is going to be perceived as fair. I think historically one of NRAO's strengths has been its ability to be flexible and to be able to accomodate new ideas, so leaving as much flexibility and discretion with the director as possible is desirable.

2. Skeptical review. I disagree strongly on one point in this section: that the review ask "whether the proposal can be done only on the NRAO telescope." What if, to make up a wild example, optical spectroscopy or radio spectroscopy could discover life on on Procyon 7. Since the optical astronomers can do it, should a panel recommend that it not be done with the VLA? If there are important scientific questions to be addressed, it is healthy to have competition and to have the measurements done more than one way. I think that the scientific priority should be the only criterion.

I also worry that intensifying the review will discourage innovative science. However, this is a problem always in reviewing science, and I don't see any better way to do it.

During my service on the Oversight committee for the VLA surveys, I was struck by how important it was for the non-NRAO group to have a commitment of time from NRAO so that they could raise funds in support of their project (this was less critical for the NRAO group because they had a lot of internal support). This is mentioned briefly in section 2, but I think it should be pointed out clearly in the report that a goal of the review process should also be to provide a certain level of commitment if it warranted and if *clearly defined* milestones are met.
[This is also a shortcoming to the existing way of reviewing VLA and VLBA proposals - you learn only a few weeks before your observing starts that you have a commitment from NRAO, and it is not always possible to match resources to the observing time your receive in a timely way.]
The purpose of the process should be to protect the investigator from the ups and downs of the review process, as well as to protect NRAO and the community from mis-use of telescope time.

An issue the draft report does not address explicitly is the length of time for which data will "belong" to the investigators. We probably can't and shouln't make that decision, but I think we should mention that it

is a decision that has to be made, and the usual one year (or whatever it is) rule that NRAO has may not apply (I can imagine situations when it should be shorter *or* longer). Perhaps at the end of section 3 we could assign the skeptical panel the job of making that decision.

4. No comment

5. I absolutely agree an AO is not desirable.

From: Martha Haynes <haynes@astrosun.tn.cornell.edu>
To: abridle@NRAO.EDU
Subject: january schedule
Date: Thu, 19 Dec 1996 12:48:29 -0500

Dear Alan,

I just thought I would forewarn you that
a telecon on Jan 8-9 won't be possible for
me. I am travelling to DC on the 8th for
AUI and then on to Palomar on the am of the
9th to start observing that evening.
I would be available on the 10th, but prefer
a late afternoon call (since I do need to
sleep after observing all night!).

Thanks,

martha

From: abridle (Alan Bridle)
To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu
Subject: forwarded message from jhewitt@maggie.mit.edu
Date: Thu, 19 Dec 1996 12:54:26 -0500

------- start of forwarded message (RFC 934 encapsulation) -------

From: jhewitt@maggie.mit.edu
To: abridle@NRAO.EDU
Cc: jhewitt@maggie.mit.edu
Subject: comments on draft report
Date: Thu, 19 Dec 96 11:10:52 EST

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ability to be flexible and to be able to accomodate new ideas,
so leaving as much flexibility and discretion with the director as
possible is desirable.

2. Skeptical review. I disagree strongly on one point in this section:
that the review ask "whether the proposal can be done only on the
NRAO telescope." What if, to make up a wild example, optical spectroscopy
or radio spectroscopy could discover life on on Procyon 7. Since the
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be done with the VLA? If there are important scientific questions to
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science. However, this is a problem always in reviewing science, and
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struck by how important it was for the non-NRAO group to have a commitment
of time from NRAO so that they could raise funds in support of their
project (this was less critical for the NRAO group because they had a lot
of internal support). This is mentioned briefly in section 2, but I think
it should be pointed out clearly in the report that a goal of the
review process should also be to provide a certain level of commitment if it
warranted and if *clearly defined* milestones are met.

[This is also a shortcoming to the existing way of reviewing
VLA and VLBA proposals - you learn only a few weeks before your observing starts that you have a commitment from NRAO, and it is not always possible to match resources to the observing time your receive in a timely way.]
The purpose of the process should be to protect the investigator from the ups and downs of the review process, as well as to protect NRAO and the community from mis-use of telescope time.

An issue the draft report does not address explicitly is the length of time for which data will "belong" to the investigators. We probably can't and shouln't make that decision, but I think we should mention that it is a decision that has to be made, and the usual one year (or whatever it is) rule that NRAO has may not apply (I can imagine situations when it should be shorter *or* longer). Perhaps at the end of section 3 we could assign the skeptical panel the job of making that decision.

4. No comment

5. I absolutely agree an AO is not desirable.
------- end -------

From: abridle (Alan Bridle)
To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu
Subject: forwarded message from Martha Haynes
Date: Thu, 19 Dec 1996 12:58:17 -0500

------- start of forwarded message (RFC 934 encapsulation) -------

From: Martha Haynes <haynes@astrosun.tn.cornell.edu>
To: abridle@NRAO.EDU
Subject: Re: NRAO Large Proposals Committee - agenda for Dec.19
Date: Wed, 18 Dec 1996 17:09:04 -0500

Dear Alan,

I have been trying to finish final grades, so didn't give
Dave's response as much thought as I'd like. I will try to by
tomorrow. I think a phone call is a great idea at this point,
so we can share ideas on the spot.

One point I'd like to raise is concerns something Dave said about
the key projects. Do/Should we allow for the possibility of
a proposal to do the same science that requires use of more than
one telescope? For example, suppose someone discovers a high z
galaxy and wants to look for redshifted CO and possibly other
species. Some work might be done with the 12m (or MMA in the future)
but also the GBT and maybe even the VLA. Is/should it be
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or are separate proposals required for each telescope? This of course
is only an anecdotal example, but I am not sure we have discussed
anything like this. (Excuse me if we did; I haven't looked back
through all the notes).

Anyway, I think your proposed agenda is on track, and that the
phone call should prove quite useful for us all.

Regards,

Martha
------- end -------

From: abridle (Alan Bridle)
To: dhogg
Subject: My notes and recollections from LPC meeting
Date: Mon, 23 Dec 1996 15:57:10 -0500

Present: Bridle, Churchwell, Haynes, Hewitt, Hogg

It was agreed that the draft report was going in the right general direction and could be used as the basis for discussion, and that there was little need to discuss Recommendations 1 or 5 in detail as they already reflected the consensus opinion.

Most of the discussion focused on Recommendations 2 (skeptical review) and 4 (upper limits).

Rec. 2 (expanded skeptical review):

Threshold for skeptical review:

The 300-hr "trigger" for skeptical review may be suitable for the VLA and VLBA but is not applicable for the 12-m. Ways of setting it in terms of the percentage of available time (relative impact on other projects) or as a multiple of the "mean time requested per proposal" were discussed. The appropriate threshold for the GBT is likely to be a strong function of time through the commissioning phase of the antenna and receivers. It was suggested that "about 10 times the mean proposal length" would be appropriate at the 12-m, where the mean proposal length is now about 3-4 days, according to D.Hogg. Our final summary was that we should suggest a threshold around 30 days' observing time for skeptical review at the 12-m, and simply point out that the threshold for the GBT will need to be established and revisited often as the telescope and instruments come on-line.

Composition of the skeptical review panel:

Agreement that the majority of skeptical review panelists should be regular proposal referees for the telescope, and that we should aim for a rough balance between "experts" in the proposal discipline and cross-disciplinary, "skeptics". For the single dishes, it may be necessary to go outside the current referee group because there would not generally be enough referees to do the job. Past referees, and cross-disciplinary experts should be sought when augmenting the single dish review panels.

The questions of how (i) how to balance time awarded to large proposals against smaller proposals addressing the same science, and (ii) of what guarantees of priority over others with similar scientific intent should be given to larger proposals once they have been scheduled, are best handled by panels whose members are currently

refereeing both large and small proposals. In other words, with the right composition of the skeptical review panels, questions of priority among proposals with similar science goals can be handled as they are now within the normal proposal procesW.

What the skeptical reviewers should evaluate:

We agreed that it is less "uniqueness" to the telescope that should be judged, but whether the proposal is "well suited" to the telescope.

The skeptical review committees should be asked to advise about the appropriateness, and length, of any proprietary "holding time" for the data from large proposals. It is essential that both the proposers and the community at large have a clear understanding about the time scale of public release of data before a project is scheduled, and large proposals must address this as part of their submission.

Assessing the need for ongoing "expert" review (also Rec.3):

We should emphasize that if a proposal is strongly endorsed on skeptical review, this creates some obligation on the NRAO to oversee the proposal's progress on behalf of the community without unduly burdening either the proposers or the referees. Some proposals may require very little further review, and a "minimalist" approach should be sought for these. Important that areas of contention, e.g. "research" issues about data processing, etc. should not stymie progress on a proposal. Issues such as timely completion and accessible archiving of the data will be appropriate for many proposals well above the threshold, however.

The appropriateness of letting proposals "volunteer" for skeptical review:

Most of us saw merit in this, both in terms of increasing the guarantees about ongoing time allocations for large projects (relative to the "will be considered further" level of guarantee offered by the present VLA proposal process, for example) and in terms of helping proposers to marshal resources for them through forward planning and grant proposals. D.Hogg remained concerned that if many people do in fact volunteer for skeptical review, then there is by implication something wrong with the present proposal system and maybe this should be addressed rather than promote a "workaround" via the skeptical review process. (It would be good to have Don Backer's and Fred Lo's views on this issue, as it was one of the few where there was any significant divergence among those at the meeting!)

The "volunteer" mechanism may also be appropriate when putting in proposals that require co-ordinated observing at several telescopes. A "skeptical review" committee might be better able to evaluate the whole plan, rather than leaving each part for independent (un-co-ordinated) review through different channels in the normal

proposal process.

It was also pointed out that there will be some people who will seek to test any new component of the proposal system simply because it is there, and that we should aim for a situation wherein only a small minority of all proposals goes to "skeptical review". (M.Haynes pointed out that KPNO "key projects" have only a small success rate, and that this limits the number of proposals for them!)

Rec.4 (upper limits)

There was discomfort with our statements as now drafted, and a wish to offer some more concrete advice!

Rather than setting up a named panel to address the issue of upper limits, we should say that in the rare instances where we have more than one good large proposal at a time for a given telescope, the Director should consult a cross-disciplinary panel of referees for that telescope about setting an upper limit to all large proposal time for that telescope.

It was pointed out that the need for setting upper limits may also be a strong function of proposal pressure (oversubscription rate, as a function of affected LST). It was felt that while the oversubscription rate on a telescope remains under about 2:1, the question of upper limits may not be too pressing. But if a proposal or proposals were to raise the oversubscription rate significantly over 2:1, then the effect on the community as a whole becomes more significant. (It would be useful to have the current over-subscription statistics for all the NRAO telescopes and I will get these a.s.a.p.)

How we proceed from here:

A.H.B. to re-draft the report for E-mail review by all before the year-end.

Follow-up telephone conference for committee is tentatively scheduled for Monday January 6 at 11 am EST. (There is already another meeting booked on the hub at 10-11 am EST that day; I have reserved the hub for a 2-hour slot but would hope not to go on that long!).

From: "David Hogg" <dhogg@polaris.cv.nrao.edu>
To: abridle@polaris.cv.nrao.edu (Alan Bridle)
Cc: dhogg@polaris.cv.nrao.edu (David Hogg)
Subject: Re: My notes and recollections from LPC meeting
Date: Mon, 23 Dec 1996 16:18:41 -0500 (EST)

Alan --

I read your notes and I think that they are both representative and complete. I think that if you send them out with a view to getting comments back to aid you in writing your draft you will find general agreement from the others that you have caught the sense of the meeting very well.

My personal comment on this bootleg version is only about the question of volunteering. It is true that I seem to differ with the rest of the group on the issue, but my differences are neither so deep nor fastly-held that they should drive the report in a significant way. That is, I am not opposed to volunteering; I worry mainly about the impact on the process. However, I agree it would be useful to hear Don and Fred on the question. Then we should be able to get closure.

But your notes fairly represent the discussion of this topic, so I do not recommend any change.

Regards,

Dave

From: haynes@astrosun.tn.cornell.edu (via the vacation program)
Apparently-To: abridle@NRAO.EDU
Subject: away from my mail
Date: Mon, 23 Dec 1996 17:20:24 -0500

I will not be reading my mail until January 6, 1997.
Your mail regarding "NRAO Large Proposals Committee: my notes from Dec.19" will be read when I return.

From: abridle (Alan Bridle)
To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu
Subject: NRAO Large Proposals Committee: my notes from Dec.19
Date: Mon, 23 Dec 1996 17:20:02 -0500

Getting organised for the next draft of our report, I extracted the following from my notes and recollections of the phone meeting on Thursday, Dec 19th.

I was not trying to keep a detailed minute of the meeting. But I thought these notes might help Don Backer and Fred Lo stay "in the loop" about our discussion. Also, if anyone who was there sees anything major that I have either forgotten or misremembered, please let me know, as I will be using these notes to steer work on the rewrite....

Merry Christmas!

Alan B.

----------%<----------

Notes on phone meeting of Large Proposals Committee
Thursday, December 19, 2 pm - 3.45 pm EST

Present: Bridle, Churchwell, Haynes, Hewitt, Hogg

It was agreed that the draft report was going in the right general direction and could be used as the basis for discussion. Also that there was little need to discuss Recommendations 1 or 5 in detail as they already reflected the consensus opinion.

Most of the discussion focused on Recommendations 2 (skeptical review)and 4 (upper limits).

Rec. 2 (expanded skeptical review):

Threshold for skeptical review:

The 300-hr "trigger" for skeptical review may be suitable for the VLA and VLBA but is not applicable for the 12-m. Ways of setting it in terms of the percentage of available time (relative impact on other projects) or as a multiple of the "mean time requested per proposal" were discussed. The appropriate threshold for the GBT is likely to be a strong function of time through the commissioning phase of the antenna and receivers. It was suggested that "about 10 times the mean

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How we proceed from here:

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Follow-up telephone conference for committee is tentatively scheduled for Monday January 6 at 11 am EST. (There is already another meeting booked on the hub at 10-11 am EST that day; I have reserved the hub for a 2-hour slot but would hope not to go on that long!).

From: haynes@astrosun.tn.cornell.edu (via the vacation program)
Apparently-To: abridle@NRAO.EDU
Subject: away from my mail
Date: Tue, 31 Dec 1996 13:54:43 -0500

I will not be reading my mail until January 6, 1997.
Your mail regarding "NRAO Large Proposals Committee: next draft follows" will be read when I return.

From: abridle (Alan Bridle)
To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu
Subject: NRAO Large Proposals Committee: next draft follows
Date: Tue, 31 Dec 1996 13:54:29 -0500

As "promised", I greet you for the New Year with a new draft of the report from our committee! It will follow in the next E-mail message.

I have reserved the Charlottesville conference hub at 804-296-7082 for a phone meeting on Monday, January 6 at 11 a.m. EST.

Please let me know whether or not you will be able to join that meeting, whose purpose will be to discuss this draft of the report.

If you have time to circulate comments on this draft to the committee by E-mail before the meeting, this would be very helpful. But I appreciate that the time is short and the season busy!

The agenda for the phone meeting will be as before: discussion of our recommendations in order, except that more detail of the phrasing, not just the intent, will now be appropriate.

I will send another message on Friday to confirm the meeting (I will reschedule it if too few of us can be present, but the 6th seemed to be a good "window of opportunity" for those of us who were at the previous phone meeting).

Best wishes,

Alan Bridle

From: abridle (Alan Bridle)
To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu
Subject: NRAO Large Proposals Committee: redraft
Date: Tue, 31 Dec 1996 13:55:05 -0500

DRAFT REPORT OF THE NRAO LARGE PROPOSALS COMMITTEE

Alan H. Bridle (Chair)
Donald C. Backer
Edward B. Churchwell
Martha P. Haynes
Jacqueline N. Hewitt
David E. Hogg
K. Y. (Fred) Lo

Summary of recommendations

RECOMMENDATION 1: The Need for a Policy.

The NRAO should have a written, disseminated, policy for the treatment of large proposals. It is important, however, that this written policy be flexible enough to cover a wide range of circumstances.

RECOMMENDATION 2: Expanded "Skeptical Review"

All proposals that ask for more observing time than a (telescope-specific) threshold, and, at the NRAO Director's discretion, some proposals requesting less time than this, should initially be evaluated by an expanded "skeptical review" panel of six or more referees.

The panel should be drawn from the normal pool of proposal referees for the telescope, augmented if necessary by others who have recently been proposal referees. The panel should be roughly balanced between "experts" in the astronomical sub-discipline addressed by the large proposal, and cross-disciplinary "skeptics".

The panel should assess:

(1) the scientific priority for the proposal in competition with all other astronomy that is being done at the telescope,

(2) whether the telescope is well suited to the proposal,

(3) whether the total duration proposed for the project is well-

defined and commensurate with the scientific priority,

(4) whether there should be any proprietary "holding time" for the data, and, if so, for how long,

(5) whether the proposal is suitable for use as a backup project in a dynamic scheduling strategy for the telescope.

(also see Recommendation 5)

RECOMMENDATION 3: Thresholds

For the VLA and VLBA, the threshold for skeptical review should be around 300 hours of observing time. For the 12-meter telescope, it should be around 1000 hours. For the GBT, the threshold should change as new instruments and higher-frequency capabilities are commissioned, and will need continual review. In all cases, these thresholds should be explicitly "fuzzy", i.e. the policy should make it clear that the NRAO Director has the option to send some proposals below these thresholds for expanded "skeptical review".

RECOMMENDATION 4: Volunteering for Skeptical Review

Proposers of "moderate-sized" (below-threshold) projects may also volunteer for expanded "skeptical review" of their proposals. This may be a way to strengthen the guarantee of the total observing time for a long-term project, or to help proposers marshal resources (staff, funding, etc) for a project that might otherwise carried out in a more fragmented and ad hoc fashion.

RECOMMENDATION 5: Ongoing "Expert" Review.

The skeptical review panel for a large proposal should also advise the NRAO Director whether any further "expert" review of the proposal is needed in four main areas:

- scientific issues of observing strategy,
- technical issues of observing strategy and data acquisition,
- ongoing review of project progress, and
- public availability of a calibrated data archive.

Not all large proposals will require further review in all of these areas, if a proposal is highly rated on skeptical review, the NRAO should try to oversee its progress without over-burdening either the proposers or the expert referees. The arrangements for any ongoing

"expert review" would be made at the discretion of the NRAO Director on a case-by-case basis.

RECOMMENDATION 6: Upper Limits to the Total Time for Large Proposals.

If several large proposals for a given telescope are highly rated by the skeptical review panels, the NRAO Director should seek advice from a cross-disciplinary subset of the regular proposal referees about upper limits to the fraction of all observing time that should be devoted to them. Any policy statement about such upper limits must emphasize they will not be interpreted as "quotas" to be filled with large projects, however.

RECOMMENDATION 7: Announcements of Opportunity

The NRAO should not make Announcements of Opportunity for the submission of large proposals. Large proposals should be submitted at the normal proposal deadlines, without special solicitation by the observatory.

<<< FULL REPORT >>>

1. Is a "large proposal" policy needed at the NRAO?.

We believe that it is. Our reasons for concluding this are twofold:

(a) Large projects will (by any definition) be ones that impact other NRAO users' work to an unusual extent. The NRAO should therefore have a process that can reassure its users that the few large projects which do get scheduled have met unusual standards of scientific importance and of uniqueness, and also that they are of finite length. To the extent that the constraints imposed on 'standard' proposals by the VLA surveys have been widely accepted, there is consensus not only that these surveys are scientifically important but also that they could only have been done with the VLA. It is also important that the proposed disruption to other work ends eventually. We believe that it the NRAO must be able to show that it is carefully balancing the scientific worth of large projects against their impact on smaller ones when making future decisions about scheduling large projects. We suggest that a key ingredient in this will be a more extensive "skeptical review" process for proposals that are above a certain threshold.

(b) Most large projects will also generate databases that are of interest to a large community of astronomers. It is therefore appropriate to seek that community's advice about the scope of a large project, about its data selection parameters, about data reduction methods, and about archiving and dissemination plans. A further, and possibly ongoing, "expert review" of large projects may therefore also be needed once they have passed initial "skeptical review". We also note that some large projects are merely long projects (e.g. large sample studies in which the individual observations are not especially challenging) but others may push the limits of the instrumentation in sensitivity, data rate or data volume, and thus benefit from expert technical advice from an expanded community at an early stage of planning.

We do not see how the NRAO could address either of the above areas satisfactorily just by extending the normal proposal review process to projects of arbitrarily large scope. We do not see how to measure the breadth of support for large proposals, or to satisfy the user community that their observing parameters have been optimized, without having a threshold above which proposals get extra initial scrutiny. Thus, a new policy is needed.

It also seems clear that no single-forum review could addressing all of the above issues well. Our proposal for a new policy has several optional stages (after the initial review) to deal with this.

The first question in the charge to the Committee also asked us whether, if a new policy is needed, it should be written down and disseminated. It will be important to strike an appropriate balance between (a) clarifying the observatory's future intentions about large projects and (b) specifying a policy in detail now that proves to be ill-suited to particular cases in future, or which is unnecessarily burdensome either to proposers or reviewers. We therefore seek an approach that has built-in flexibility, but which can and should be written down and disseminated to the user community.

RECOMMENDATION 1

The NRAO should have a written, disseminated, policy for the treatment of large proposals. It is important however that this written policy be flexible enough to cover a wide range of circumstances.

2. A threshold for an enhanced "skeptical review".

"Normal" proposals are reviewed by small specialized panels of discipline experts from outside the NRAO. A favorable review from within the discipline is a necessary, but we believe an insufficient, condition for scheduling a "large" proposal. A project large enough to significantly constrain work in other areas of astronomy should be asked to impress a review panel that also includes astronomers whose work will not directly benefit from the project's final database.

Such an initial review should ask (a) whether a large proposal has high enough scientific priority to warrant the displacement of normal work in other areas, and (b) whether the proposal is well suited to the NRAO telescope (most particularly, that it is not better suited to some other radio telescope).

An important ingredient in community acceptance of large proposals that displace other research significantly is that the duration of such proposal is well understood, finite, and commensurate with the scientific priority of the project. It is therefore important to establish before a project begins that a specific (finite) grant of observing time is involved, and that any extension beyond this must be re-applied for either through the normal proposal process (if small) or by further skeptical review (if large).

The review panels should also be asked to advise about the appropriateness, and length, of any proprietary "holding time" for the data from large proposals. It is essential that the proposers and the user community clearly understand what has been agreed about the time scale of public release of data before a project is scheduled. Large proposals must therefore address this issue as part of their submission.

If the telescope is one on which dynamic scheduling is used,&the "skeptical review" panel might also be asked to comment on whether a proposal is appropriate for use as part of that scheduling strategy.

The expanded "skeptical review" panels for large proposals should be drawn from people who are already refereeing other discipline areas for that telescope. For the single dishes, it may be necessary to augment the current referee group because there may not be enough current referees for the job. Past referees, and other cross-disciplinary experts, should then be co-opted.

The heart of our suggestion is therefore that any proposal exceeding some threshold (in hours, discussed quantitatively below) be reviewed first by a "skeptical review" panel drawn from the pool of proposal referees for that telescope, but representing all major astronomical sub-disciplines served by the telescope. This would allow some of the same referees who judge smaller projects to weigh their priority against those of any large projects that might use up all their time. It ensures that large projects will be judged in the specific context of their impact on the other work currently proposed for the telescope, by a group of people well positioned to do so.

The questions of (i) how to balance time awarded to large proposals against smaller proposals addressing the same science, and (ii) what guarantees (of priority over others with similar scientific intent) should be given to large proposals once they have been scheduled, are also best handled by panels whose members referee both large and small proposals. In other words, with the proposed composition of the skeptical review panels, questions of priority among large and small proposals with similar science goals can be handled as they are now within the normal proposal process.

We strongly prefer this approach to that of having a separate standing committee of "large proposal reviewers" who do not participate in the normal proposal-review process. Such a separate committee would be less aware of the overall scientific context with which large proposal(s) would compete. Also, the act of setting up a separate process for reviewing large proposals could generate pressure to have some such proposals scheduled. We do not think this is desirable.

RECOMMENDATION 2: Expanded "Skeptical Review"

All proposals that ask for more observing time than a (telescope-specific) threshold, and, at the NRAO Director's discretion, some proposals requesting less time than this, should initially be evaluated by an expanded "skeptical review" panel of six or more referees.

The panel should be drawn from the normal pool of proposal referees for the telescope, augmented if necessary by others who have recently been proposal referees. The panel should be roughly balanced between "experts" in the astronomical sub-discipline addressed by the large proposal, and cross-disciplinary "skeptics".

The panel should assess:

(1) the scientific priority for the proposal in competition with all other astronomy that is being done at the telescope,

(2) whether the telescope is well suited to the proposal,

(3) whether the total duration proposed for the project is well-defined and commensurate with the scientific priority,

(4) whether there should be any proprietary "holding time" for the data, and, if so, for how long,

(5) whether the proposal is suitable for use as a backup project in a dynamic scheduling strategy for the telescope.

(also see Recommendation 5)

3. Setting Thresholds for Skeptical Review

At the VLA and VLBA:

We suggest that the threshold for an expanded initial review should be set in an explicitly "fuzzy" range of 200-300 hours of observing time. (300 hrs corresponds to about 2 weeks of schedule time if done in one

session.) Since 1990, use of this criterion to trigger additional review would have affected only about one project previously treated as "standard" at the VLA, plus the two VLA surveys. It would have affected five previously treated as "standard" at the VLBA. (These statements are based on statistics for the VLA and VLBA furnished to us by Barry Clark.) The number of past proposals that would have been exposed to "skeptical review" remains modest wherever the threshold could be set in the few-hundred-hour range (for these telescopes).

At the 12-meter telescope:

We believe that the main criterion for setting the threshold is "significant displacement of other proposals", so a reasonable criterion is that the threshold should be around 10 times the mean length of scheduled proposals. A threshold around 1000 hours might therefore be more appropriate for the 12-meter telescope.

At the GBT:

In the case of the GBT, we can expect proposal pressure to be a strong function of time as new instrumental capabilities are commissioned. There may however be times early on when instruments are unexpectedly unavailable, and dynamic scheduling is needed. There may be good reasons to seek to combine some classes of large proposal with a dynamic scheduling strategy: e.g., some survey observations at low frequencies might be appropriate as "backup" projects at times when higher frequencies are unavailable due to weather or equipment problems. We suggest that a working group be established to examine such issues for large proposals at the GBT, both with regard to setting appropriate upper limits in an ongoing way, and with regard to their role in any dynamic scheduling strategy for the telescope.

Our main reason for suggesting a "fuzzy" threshold for the initial "skeptical review", i.e. an explicit statement that discretion will be exercised by the NRAO in applying the criterion, is to discourage attempts to avoid the process by tailoring proposals to be just under a strict threshold.

RECOMMENDATION 3: Thresholds

For the VLA and VLBA, the threshold for skeptical review should be around 300 hours of observing time. For the 12-meter telescope, it should be around 1000 hours. For the GBT, the threshold should change as new instruments and higher-frequency capabilities are commissioned, and will need continual review. In all cases, these thresholds should be explicitly "fuzzy", i.e. the policy should make it clear that the NRAO Director has the option to send some proposals below these thresholds for expanded "skeptical review".

4. Should Proposers be able to "Volunteer" for Skeptical Review?

Some 200-300 hour projects have already been done at the VLA and VLBA via series of consecutive proposals for 100 or so hours. This approach provides a way to do moderate-sized projects through the normal channels. We see no reason to discourage it. It amounts to an ongoing, but not guaranteed, grant of observing time on the basis of demonstrable progress, with the review time scale being set by the proposers' success with, and capacity for, the project.

The approach may not be well-suited to all moderate-sized projects, however. Data subsets or pilot projects do not always produce good science. Doing a moderate-sized project piecemeal so as to maximize short-term "excitement" at proposal deadlines may distort its overall strategy. Some VLA observations of source samples that interest a wide community have been fragmented into small proposals carried out by different groups. The resulting loss of homogeneity limits the long-term benefit to the community, which would be better served by an approach based on a small number of moderate-sized and well-coordinated proposals rather than a large number of small, independent ones. (VLA observations of the 3CR continuum sources, and of galactic water vapor masers are particular examples of this known to us.)

The "volunteer" mechanism may also be appropriate when putting in proposals that require coordinated observing at several telescopes. A "skeptical review" committee might be better able to evaluate the whole plan, rather than leaving each part for independent (un-coordinated) review through different channels in the normal proposal process.

We therefore see some merit in inviting proposers to volunteer projects of moderate size (100-300 hrs) for the enhanced "skeptical review". This might be a way for a proposer to ensure that moderate-sized proposals obtain all the tite that they need (regardless of graduate student involvement or the status of intermediate results). This might also encourage attempts to produce more homogeneous, moderate-sized databases that would benefit a wider community. Success in such proposals would also allow proposers to marshal resources (students, computing, etc.) better for moderate-sized projects, simply by carifying that all of the requested observing time would be granted (the current "will be considered further" status at the VLA leaves some uncertainties hanging over proposals in the present queue.) A proposal that has successfully passed the skeptical review process at the NRAO might also be more attractive to funding agencies.

PI's will therefore have some incentives to "volunteer" for extra review, and it seems advantageous to offer this possibility as an option. We should however aim for a situation wherein still only a small minority of all proposals goes for "skeptical review". (At KPNO, this happens because there is a only a small success rate for "key projects".)

RECOMMENDATION 4: Volunteering for Skeptical Review

Proposers of "moderate-sized" (below-threshold) projects may also volunteer for expanded "skeptical review" of their proposals. This may be a way to strengthen the guarantee of the total observing time for a long-term project, or to help proposers marshal resources (staff, funding, etc) for a project that might otherwise carried out in a more fragmented and ad hoc fashion.

5. "Expert Review" - Ongoing Monitoring and Supervision.

For many, but not necessarily all, large projects, further review by more narrowly-focussed expert panels is also appropriate before they are scheduled.

The impact of large proposals on other NRAO users also requires us to ensure that their observing techniques and time allocations are optimized both to the science and to the telescope involved, and that the final databases are made available promptly and in scientifically robust forms.

The main areas in which further expert review may be appropriate before a project is actually scheduled are:

a) "Up front" scientific issues: sample definition and selection, sensitivity limits, extent of sky coverage. These are areas where it is appropriate to show that some consensus has been achieved , or at least that advice has been obtained, from across the astronomical sub-discipline most concerned with the proposal.

b) "Up front" technical issues: optimal data acquisition strategies, organization of observing time, instrumental limitations or other on-line issues which may have a strong engineering or operational component. In some cases, it may be important to require a pilot or demonstration project to prove an observational technique before going ahead with the project as initially proposed. This area may require review by a group that involves scientists, engineers familiar with the instruments, and telescope operations staff.

Ongoing review of a project after it has been started may be appropriate to monitor

a) Data-processing progress. Ongoing review may particularly appropriate for projects whose data volume presents a major computing challenge. If such review is required, the supervision should be "strong". By this we mean that the review panel must be able to recommend withholding later instalments of observing time if the

project does not meet data-processing targets (quality and speed of the data analysis) in a timely way. Such a panel will in effect re-referee the project while it is in progress, and could recommend no further time allocation if agreed data-processing milestones were not met.

b) Construction hf an accessible public data archive. If a big community's observing time is "taxed" to make room for large projects, then that community should share the benefits of the final database quickly. This implies a review process aimed at ensuring prompt access to calibrated data whose quality are uniform and well-understood. This would typically require a review panel with a mix of scientific and computer expertise.

To the extent that any of these issues apply to a particular large proposal, they imply review by groups different in composition from the initial "skeptical review" panel. Unlike this panel, which should be cross-disciplinary and is probably best drawn from the existing (external to NRAO) referee pool, the "expert review" panels would benefit by including people who are not currently acting as NRAO referees. They should include NRAO scientific and technical staff with special knowledge about the telescope, the science, or data processing relevant to the proposal. They also need to be ongoing, and might use a range of formats, including telephone conferences, face-to-face meetings or workshops, that are not traditionally used for proposal refereeing at the NRAO.

We emphasize that not all "large" projects should need exposure to all of the above forms of ongoing monitoring and supervision. It is likely that all projects above some very large (1000-hour ?) threshold should have some ongoing supervision by an ad hoc "expert panel". But length of observing time alone is not the only criterion for whether ongoing expert review is necessary. The technical "degree of difficulty" of the project is clearly significant. For example, proposals that are straightforward in terms of observing technique and data analysis, but which require 'simply' large amounts of time, might be selected on the basis of a favorable evaluation of the skeptical review committee. But a proposal which challenges the current technical frontier (Zeeman work on the GBT, a dramatic new pulsar search strategy) and which requires an extensive block of time should surely be reviewed by a group with a strong technical background before being scheduled.

It is important that contentious areas, e.g. "research" issues about data processing, etc. should not be allowed to stymie progress on a proposal. Issues such as timely completion and accessible archiving of the data will be important for many large proposals, however.

The key issue is that the style and extent of ongoing supervision of large projects should be determined on a case-by-case basis. Any policy that is written down now should simply define a process that is flexible enough to make this case-by-case determination. It should not try to anticipate all of the possible supervisory issues in advance.

We therefore suggest that when a "skeptical review" panel for a proposal assigns it high scientific priority, they should also recommend whether the proposal should be subject to further expert review, and if so in what areas. The scope and style of any further review process should however be decided by the NRAO Director. with advice from any other appropriate sources. It is important that the process begin with input from representatives of the whole astronomical community served by the telescope involved, but the "skeptical review" panel should neither be expected to, or expect to, specify the entire subsequent review process.

(We note parenthetically that in discussing this area, we were guided by the recent experience with the two VLA surveys. We understand that there were significant technical issues that had to be settled for each of the surveys, primarily in the area of data analysis. We also believe that the community relied on the survey oversight committee(s) to ensure that the data were made readily available to the public in a timely manner. Perhaps this would have occurred anyway, but we believe that it was helpful to have a mechanism in place to strengthen the resolve of the PI's!)

RECOMMENDATION 5: Ongoing "Expert" Review.

The skeptical review panel for a large proposal should also advise the NRAO Director whether any further "expert" review of the proposal is needed in four main areas:

- scientific issues of observing strategy,
- technical issues of observing strategy and data acquisition,
- ongoing review of project progress, and
- public availability of a calibrated data archive.

Not all large proposals will require further review in all of these areas, if a proposal is highly rated on skeptical review, the NRAO should try to oversee its progress without over-burdening either the proposers or the expert referees. The arrangements for any ongoing "expert review" would be made at the discretion of the NRAO Director on a case-by-case basis.

6. Should an Over-all Upper Limit be set to the Time Available for Large Projects?

There must be some upper limit, or we could have a situation where all the time goes to a few large projects -- an inappropriate asymptote for a national facility with a large, diverse user base!

The limits should be expected to vary from telescope to telescope, and with time at any given telescope, just as the overall proposal pressures vary in response to major changes in instrumentation, to discipline-wide shifts in astronomical emphasis, or to astronomical transients such as supernovae and comets.

In general, we feel that while the over-subscription rate on a telescope remains under 2:1, the question of exactly how upper limits are set for large proposals may not be too pressing. But if a large proposal or proposals were then to raise the over-subscription rate significantly over 2:1, the effects would likely be noticeable across a broad community.

For the more heavily over-subscribed facilities such as the VLA, VLBA, and GBT (presumably) the appropriate upper limits would be below those appropriate for instruments such as the former 300-ft, the 140-ft and the Green Bank interferometer in the years before their shutdown. In the later years of a telescope's operation, doing large-scale surveys becomes attractive for operational, as well as scientific, reasons. (Simplifying telescope schedules and minimizing equipment changes are often good operational strategies as a facility ages).

This committee generally agreed that their own discomfort threshold for displacement of small programs on an instrument in the prime of its scientific life is in the range from 1/6 to 1/3 of the total observing time being devoted to large proposals. It also noted that large projects that require time in the most "popular" LST ranges for galactic and extragalactic work impose more severe constraints than those with intrinsic LST flexibility.

But we do not wish to specify general upper limits for any particular telescope as part of this report. Rather, we wish to recommend how such an assessment should be obtained for any telescope when needed.

In our opinion, the best group to advise the NRAO Director at any time about upper limits for large proposal time allocations on a particular telescope would be a cross-disciplinary panel of scientists with access to the statistics of observing time requests from, and an assessment of the scientific vigor in, the different sub-disciplines that dominate the proposal demand at the telescope.

This description matches that of the "cross-disciplinary" parts of the "skeptical review" panels described earlier.

Advice on upper limits to the observing time for large proposals will be needed only on the (presumably rare) occasions when more than one large proposal at a time is highly rated by the skeptical review panels for a given telescope. We suggest that, on these occasions, the NRAO Director seek such advice from the cross-disciplinary cohort of the skeptical review panels for the proposals that have created the demand.

It is most important that any such advice about upper limits to the time that should be devoted to large proposals not be re-interpreted as quotas of time that "should" be filled by large proposals. High scientific priority based on reviewing proposals that were initiated on the "open market" by users should be the driver for assigning time to a large proposal in competition with smaller projects.

RECOMMENDATION 6: Upper Limits to the Total Time for Large Proposals.

If several large proposals for a given telescope are highly rated by the skeptical review panels, the NRAO Director should seek advice from a cross-disciplinary subset of the regular proposal referees about upper limits to the fraction of all observing time that should be devoted to them. Any policy statement about such upper limits must emphasize they will not be interpreted as "quotas" to be filled with large projects, however.

7. Announcements of Opportunity

The committee considered whether the NRAO should explicitly solicit proposals for large projects via Announcements of Opportunity, either targeted to specific disciplines or to special deadlines (other than those of the regular proposal process.)

It was our unanimous opinion that this would be undesirable. It would separate "opportunities" for making large project proposals from the regular proposal process, whereas we see merit in keeping the process for large and small proposals well-coupled, It is also hard to see what benefit would come by encouraging the whole user community to think about large proposals simultaneously. The NRAO-operated telescopes are ground-based and flexible in their capabilities, so operational and planning considerations differ greatly from those needed to establish the scientific program of space-borne instruments, for example. The AO approach would however place some obligation on the NRAO to schedule some large projects after a period in which it had encouraged the whole user community to make proposals for them.

It is particularly undesirable to thus create an artificial imbalance between the pressure for large and regular proposals when our ultimate goal is to find an appropriate balance. We feel that scientific balance is most likely to be achieved through a proposal process driven mainly by the scientific interests of individual investigators, rather than by ad hoc deadlines.

RECOMMENDATION 7: Announcements of Opportunity

The NRAO should not make Announcements of Opportunity for the submission of large proposals. Large proposals should be submitted at the normal proposal deadlines, without special solicitation by the observatory.

From: "David Hogg" <dhogg@NRAO.EDU>
To: abridle@NRAO.EDU (Alan Bridle)
Cc: dhogg@polaris.cv.nrao.edu (David Hogg)
Subject: Re:Meeting
Date: Tue, 31 Dec 1996 14:43:07 -0500 (EST)

Hi Alan,
I will attend the meeting next Monday.
Dave

From: "K. Y. Lo" <kyl@astro.uiuc.edu>
To: Alan Bridle <abridle@NRAO.EDU>
Cc: dbacker@astron.Berkeley.EDU, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, "K. Y. Lo" <kyl@astro.uiuc.edu>,
jhewitt@mit.edu, dhogg@NRAO.EDU
Subject: Re: NRAO Large Proposals Committee: next draft follows
Date: Thu, 2 Jan 1997 04:46:34 -0600 (CST)

Dear Alan,

Unfortunately I will still be abroad on Jan 6 and will therefore
miss the phone conference.

I read the draft and found it largely right on the mark. I must
admit I share Dave Hogg's misgivings about Recommendation 4, but
perhaps from a different perspective.
I in fact think that the current refereeing at NRAO needs some
review to go over some of the issues that Receommendation 4
is supposed to "fix" for "moderate proposals". I would
advocate improving on the current refereeing system so that
recommendation 4 would become unecessary. But, perhaps this is
outside the purview of this committee.

About recommendation 5 on ongoing review, I would stress that
the review is meant to optimize the observations and data
reduction, and to assure timely progress, and NOT to impose
bureaucratic burdens. the need for this ongoing review is
independent of the rating, but dependent of the magnitude and
difficulty of the observations. Therefore, I do not fully understand the
current wording of this recommendation.

I would agree on the need
of flexibility. to the extent that large proposals impact
to a significant degree the rest of the user community, making
the calibrated data into publicly accessible archives seems
almost obligatory in my opinion.

Happy New Year,
KYL

From: abridle (Alan Bridle)
To: "K. Y. Lo" <kyl@astro.uiuc.edu>
Subject: Re: NRAO Large Proposals Committee: next draft follows
Date: Thu, 2 Jan 1997 11:59:44 -0500

K. Y. Lo writes:
> Dear Alan,
>
> Unfortunately I will still be abroad on Jan 6 and will therefore
> miss the phone conference.

That's a pity, but of course if you have time to make suggestions
by E-mail that is also extremely helpful.

>
> I read the draft and found it largely right on the mark. I must
> admit I share Dave Hogg's misgivings about Recommendation 4, but
> perhaps from a different perspective.
> I in fact think that the current refereeing at NRAO needs some
> review to go over some of the issues that Receommendation 4
> is supposed to "fix" for "moderate proposals". I would
> advocate improving on the current refereeing system so that
> recommendation 4 would become unecessary. But, perhaps this is
> outside the purview of this committee.
>

Perhaps not, as it is inevitable that things we do have to to talk
about for large proposals interact with the general proposal system as
it now exists. If you would like to be more explicit about where you
think improvements are needed, it might be very useful in getting
this recommendation straight! I do think this is one of the few
areas where we have a little divergence on the committee at the
moment, so it is well worth us exploring carefully.

> About recommendation 5 on ongoing review, I would stress that
> the review is meant to optimize the observations and data
> reduction, and to assure timely progress, and NOT to impose
> bureaucratic burdens. the need for this ongoing review is
> independent of the rating, but dependent of the magnitude and
> difficulty of the observations. Therefore, I do not fully understand the
> current wording of this recommendation.

Can you suggest some other wording? The goal is have the skeptical
review panel recommend what further review may be needed, but to
help them out by giving them a sort of "checklist" of things to
consider. How would you put this differently? (I am very open
to suggestions for re-wording at this)

>
> I would agree on the need
> of flexibility. to the extent that large proposals impact
> to a significant degree the rest of the user community, making
> the calibrated data into publicly accessible archives seems
> almost obligatory in my opinion.

>
> Happy New Year,

And to you! When do you get back the the US?

Alan B.

From: abridle (Alan Bridle)
To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu
Subject: NRAO Large Proposals Committee: Over-subscription rates
Date: Thu, 2 Jan 1997 12:25:14 -0500

One of my action items from the Dec. 19th phone meeting was to get hold of over-subscription rate data for the various NRAO telescopes. It turns out that these do not exist in any systematic fashion, though the occasional numbers and graphs have indeed been shown at Users' Meetings. (Ron Ekers used to keep such statistics for the VLA, but apparently the Site Managers are not currently doing so.)

However, questions about the over-subscription rate come up often enough that the proposal-submission process will now begin keeping track of it. Bob Brown tells me that, as of Jan 1 1997, Joanne Nance will keep the statistics that are needed, as part of her processing of incoming proposals. Thus, some numbers will be available in the near future, but probably a bit late for us to use explicitly in our report (which I would like Paul Vanden Bout to see, at least in draft, before the end of this month).

Whether or not this matters may depend on whether Paul has further questions for us on seeing our report!

Alan B.

From: churchwell@madraf.astro.wisc.edu
To: abridle@NRAO.EDU
Subject: RE: NRAO Large Proposals Committee: next draft follows
Dat
: Thu, 02 Jan 1997 21:34:31 EST

Alan,

I got the draft and will try to give it a thoughtful read before Monday. Gallagher has been threatening us with a faculty meeting on Monday, but he hasn't announced the time yet. I will try to get it scheduled so that it doesn't conflict with the telecon.

Hope you have had a good holiday season.

Best, Ed

From: "David Hogg" <dhogg@polaris.cv.nrao.edu>
To: abridle@polaris.cv.nrao.edu (Alan Bridle)
Cc: dbacker@astron.Berkeley.EDU, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu,
kyl@sgr.astro.uiuc.edu, dhogg@polaris.cv.nrao.edu (David Hogg)
Subject: The draft report
Date: Fri, 3 Jan 1997 09:43:24 -0500 (EST)

Dear Alan,

I have gone over the draft report, and I think it is excellent. The recommendations are responsive to the charge, and I think that the discussion of each recommendation shows very nicely the considerations which the committee discussed in the course of arriving at the recommendations.

The only change which I suggest is to emphasize that the "skeptical review" will be a relatively rare event, perhaps by adding a sentence in the last paragraph of the discussion which precedes recommendation 4:

PI's will therefore have some incentives to "volunteer" for extra review, and it seems advantageous to offer this possibility as an option. We should however aim for a situation wherein still only a small minority of all proposals goes for "skeptical review". This goal can perhaps be accomplished by holding those proposals undergoing "skeptical review" to a higher standard of excellence, in recognition of the Observatory's long term commitment to the successful ones. This has happened with the "key projects" program at KPNO, where the success rate is small.

Regards,

Dave

From: abridle (Alan Bridle)
To: dhogg
Subject: Some rewording to Sec.6
Date: Fri, 3 Jan 1997 15:13:08 -0500

Dave, would this strike you as any better? [The back half is somewhat rewritte, thrust is much the same].

A.

6. Should an Over-all Upper Limit be set to the Time Available for Large Projects?

There must be some upper limit, or we could have a situation where all the time goes to a few large projects -- an inappropriate asymptote for a national facility with a large, diverse user base.

The limits should be expected to vary from telescope to telescope, and with time at any given telescope, just as the overall proposal pressures vary in response to major changes in instrumentation, to discipline-wide shifts in astronomical emphasis, or to astronomical transients such as supernovae and comets.

In general, we feel that while the over-subscription rate on a telescope remains under 2:1, the question of exactly how upper limits are set for large proposals may not be too pressing. But if a large proposal or proposals raise the over-subscription rate much over 2:1, their effects would likely be noticeable across a broad community and the upper-limit question would be more pressing.

For the more heavily over-subscribed facilities such as the VLA, VLBA, and GBT (presumably) the appropriate upper limits would be below those appropriate for instruments such as the former 300-ft, the 140-ft and the Green Bank interferometer in the years before their shutdown. In the later years of a telescope's operation, doing large-scale surveys becomes attractive for operational, as well as scientific, reasons. (Simplifying teleswope schedules and minimizing equipment changes are often good operational strategies as a facility ages).

Within this committee, our thresholds for discomfort about large proposals displacing smaller ones on an instrument in the prime of its scientific life ranged from 1/6 to 1/3 of the total observing time. (Large projects that require time in the most "popular" LST ranges for galactic and extragalactic work would obviously contrain other work more severely than those with intrinsic LST flexibility.)

We have concluded however that it is probably inappropriate for us to go beyond this, to assess general large-proposal upper limits for any particular telescope as part of this report. Instead, we wish to recommend how such an assessment should be obtained for any telescope when it is needed.

In our opinion, the best group to assess this issue would be a cross-disciplinary panel of scientists with access to the statistics

of observing time requests from, and an appraisal of the scientific vigor in, the different sub-disciplines that dominate the proposal demand at the telescope. This description matches that of the "cross-disciplinary" parts of our proposed "skeptical review" panels.

We also believe that advice on upper limits to the observing time for large proposals will be needed only on the (presumably rare) occasions when more than one large proposal at a time is highly rated by the skeptical review panels for a given telescope. We therefore suggest that, on these occasions, the NRAO Director seek such advice from the cross-disciplinary cohort of those skeptical review panels.

It is important that any such upper limits that are established at such times not be re-interpreted later as quotas of time that "should" be filled by large proposals. High scientific priority based on reviewing proposals that were initiated on the "open market" by users should be the driver for assigning time to a large proposal in competition with smaller projects.

RECOMMENDATION 6: Upper Limits to the Total Time for Large Proposals.

If several large proposals for a given telescope are highly rated by the skeptical review panels, the NRAO Director should seek advice from a cross-disciplinary subset of the regular proposal referees about upper limits to the fraction of all observing time that should be devoted to them. Any policy statement about such upper limits must emphasize they will not be interpreted as "quotas" to be filled with large projects, however.

From: "David Hogg" <dhogg@polaris.cv.nrao.edu>
To: abridle@polaris.cv.nrao.edu (Alan Bridle)
Cc: dhogg@polaris.cv.nrao.edu (David Hogg)
Subject: Re: Some rewording to Sec.6
Date: Fri, 3 Jan 1997 16:21:03 -0500 (EST)

Alan,
Although the changes were relatively small, they seemed to make a significant improvement in the flow of the argument. I like this version much better.

I am sorry to have caused you extra effort, and I hope that you will feel it was worthwhile.

Dave

From: abridle (Alan Bridle)
To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu
Subject: NRAO Large Proposals Committee: Jan. 6th Meeting
Date: Fri, 3 Jan 1997 16:30:24 -0500

I have only heard from Dave Hogg, Ed Churchwell and Fred Lo so far re the telephone meeting at 11.00 EST on Monday, January 6. (Dave and Ed can attend, Fred cannot). But as Martha Haynes and Jackie Hewitt originally indicated that this date could work for them, I will plan to go ahead at this time. If it is a very small meeting, it may also be a very quick one, and I will follow up by E-mail and individual phone calls instead.

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Arrangement: Call 804-296-7082 (I will place the set-up call a few
at 11.00 EST minutes earlier to establish the hub)

==========

Agenda:

1. Discussion of second draft of our report, particular attention to;

- Rec.4: should we discuss ramifications for regular proposal process
- Rec.5: still needs clarification about how much expert review we are suggesting, and why?
- Rec.6: is it now sufficiently specific?

2. Schedule for completion of report

- draft to PVB?
- phone debriefing with with PVB?

(I suggest that we give the draft to Paul soon, so he can see its general intent by mid-January, and invite him to join a final phone meeting later in the month at which he could explore any outstanding questions with us all).

Alan B.

From: abridle (Alan Bridle)
To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu
Subject: NRAO Large Proposals Committee: Reworded Section 6.
Date: Fri, 3 Jan 1997 16:33:14 -0500

Dave Hogg suggested that the body of Section 6 could to with a little more massaging to make it clearer, and I have made the following redraft in response to his comments. [The back half is somewhat rewritten, the thrust is much the same].

A.

==========

6. Should an Over-all Upper Limit be set to the Time Available for Large Projects?

There must be some upper limit, or we could have a situation where all the time goes to a few large projects -- an inappropriate asymptote for a national facility with a large, diverse user base.

The limits should be expected to vary from telescope to telescope, and with time at any given telescope, just as the overall proposal pressures vary in response to major changes in instrumentation, to discipline-wide shifts in astronomical emphasis, or to astronomical transients such as supernovae and comets.

In general, we feel that while the over-subscription rate on a telescope remains under 2:1, the question of exactly how upper limits are set for large proposals may not be too pressing. But if a large proposal or proposals raise the over-subscription rate much over 2:1, their effects would likely be noticeable across a broad community and the upper-limit question would be more pressing.

For the more heavily over-subscribed facilities such as the VLA, VLBA, and GBT (presumably) the appropriate upper limits would be below those appropriate for instruments such as the former 300-ft, the 140-ft and the Green Bank interferometer in the years before their shutdown. In the later years of a telescope's operation, doing large-scale surveys becomes attractive for operational, as well as scientific, reasons. (Simplifying telescope schedules and minimizing equipmen| changes are often good operational strategies as a facility ages).

Within this committee, our thresholds for discomfort about large proposals displacing smaller ones on an instrument in the prime of its scientific life ranged from 1/6 to 1/3 of the total observing time. (Large projects that require time in the most "popular" LST ranges for galactic and extragalactic work would obviously contrain other work more severely than those with intrinsic LST flexibility.)

We have concluded however that it is probably inappropriate for us to go beyond this, to assess general large-proposal upper limits for any particular telescope as part of this report. Instead, we wish to recommend how such an assessment should be obtained for any telescope when it is needed.

In our opinion, the best group to assess this issue would be a cross-disciplinary panel of scientists with access to the statistics of observing time requests from, and an appraisal of the scientific vigor in, the different sub-disciplines that dominate the proposal demand at the telescope. This description matches that of the "cross-disciplinary" parts of our proposed "skeptical review" panels.

We also believe that advice on upper limits to the observing time for large proposals will be needed only on the (presumably rare) occasions when more than one large proposal at a time is highly rated by the skeptical review panels for a given telescope. We therefore suggest that, on these occasions, the NRAO Director seek such advice from the cross-disciplinary cohort of those skeptical review panels.

It is important that any such upper limits that are established at such times not be re-interpreted later as quotas of time that "should" be filled by large proposals. High scientific priority based on reviewing proposals that were initiated on the "open market" by users should be the driver for assigning time to a large proposal in competition with smaller projects.

RECOMMENDATION 6: Upper Limits to the Total Time for Large Proposals.

If several large proposals for a given telescope are highly rated by the skeptical review panels, the NRAO Director should seek advice from a cross-disciplinary subset of the regular proposal referees about upper limits to the fraction of all observing time that should be devoted to them. Any policy statement about such upper limits must emphasize they will not be interpreted as "quotas" to be filled with large projects, however.

------- end -------

From: jhewitt@maggie.mit.edu
To: dbacker@astron.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, kyl@sgr.astro.uiuc.edu,
dhogg@polaris.cv.nrao.edu, abridle@NRAO.EDU
Cc: jhewitt@maggie.mit.edu
Subject: comments on draft proposal
Date: Mon, 6 Jan 97 09:21:44 EST

I think the report looks very good and just have a couple of small comments.

I, too, was worried at first about recommendation 4. But I now agree that it would be useful to have a mechanism to have a proposal reviewed differently than the standard way. The current way leaves many proposals in an uncertain state (will be considered further) but (unlike Fred!) I am reluctant to recommend a change to the current way because it is so FAST - you can get on the telescope a few months after submitting a proposal. So having a mechnism to allow yourself to be subjected to a longer, slower review by a committee, but also having then the guarantee of telescope time to make it easier to plan and gather resources, is important.

I agree with Dave that we need to emphasize that committees and bureaucracy should be imposed only when absolutely necessary. For recommendation 5 after the bullets could we say

Not all large proposals will require further review in all of these areas, and some may not require further review at all.
If a proposal...

The present wording implies to me that in most cases a review committee should be set up.

Jackie

From: Martha Haynes <haynes@astrosun.tn.cornell.edu>
To: abridle@NRAO.EDU
Subject: phone call
Date: Mon, 6 Jan 1997 09:31:47 -0500

dear alan,
i am just back at 2am from vacation, but
will be able to call in at 11am this morning.
martha

From: abridle (Alan Bridle)
To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu
Subject: NRAO Large Proposals Committee: Report redraft
Date: Mon, 6 Jan 1997 15:33:10 -0500

DRAFT REPORT OF THE NRAO LARGE PROPOSALS COMMITTEE

Alan H. Bridle (Chair)
Donald C. Backer
Edward B. Churchwell
Martha P. Haynes
Jacqueline N. Hewitt
David E. Hogg
K. Y. (Fred) Lo

6 January 1997

Summary of recommendations

RECOMMENDATION 1: The Need for a Policy.

The NRAO should have a written, disseminated, policy for the treatment of large proposals. It is important, however, that this written policy be flexible enough to cover a wide range of circumstances.

RECOMMENDATION 2: Expanded "Skeptical Review"

All proposals that ask for more observing time than a (telescope-specific) threshold, and, at the NRAO Director's discretion, some proposals requesting less time than this, should initially be evaluated by an expanded "skeptical review" panel of five or more referees.

The panel should be drawn from the normal pool of proposal referees for the telescope, augmented if necessary by others who have recently been proposal referees. The panel should be roughly balanced between "experts" in the astronomical sub-discipline addressed by the large proposal, and cross-disciplinary "skeptics".

The panel should assess:

(1) the scientific priority for the proposal in competition with all other astronomy that is being done at the telescope,

(2) whether the telescope is well suited to the proposal,

(3) whether the total duration proposed for the project is well-defined and commensurate with the scientific priority,

(4) whether there should be any proprietary "holding time" for the data, and, if so, for how long,

(5) whether the proposal is suitable for use as a backup project in a dynamic scheduling strategy for the telescope.

(also see Recommendation 5)

RECOMMENDATION 3: Thresholds

For the VLA and VLBA, the threshold for skeptical review should be around 300 hours of observing time. For the 12-meter telescope, it should be around 1000 hours. For the GBT, the threshold should change as new instruments and higher-frequency capabilities are commissioned, and will need continual review. In all cases, these thresholds should be explicitly "fuzzy", i.e. the policy should make it clear that the NRAO Director has the option to send some proposals below these thresholds for expanded "skeptical review".

RECOMMENDATION 4: Volunteering for Skeptical Review

Proposers of "moderate-sized" (below-threshold) projects may also volunteer for expanded "skeptical review" of their proposals. This option provides a way to obtain a stronger guarantee of observing time for moderate-sized projects whose science could clearly be advanced by receiving such guarantees, in return for submitting them to a more demanding initial review. We emphasize that we see this as an option to be used rarely, and only in exceptional cases where the science would suffer if the project was done piecemeal through the regular proposal process.

RECOMMENDATION 5: Ongoing "Expert" Review.

The skeptical review panel for a large proposal should also advise the NRAO Director whether any further "expert" review of the proposal is needed in four main areas:

- scientific issues of observing strategy,
- technical issues of observing strategy and data acquisition,
- ongoing review of project progress, and,
- public availability of the data products.

Not all large proposals will require further review in all of these

areas, and many may not require further review at all. If a highly-rated large proposal is of sufficient scope or technical complexity to warrant ongoing review, the NRAO should make every effort to achieve this without over-burdening either the proposers or the expert referees. The arrangements for any ongoing "expert review" would be made at the discretion of the NRAO Director on a case-by-case basis.

RECOMMENDATION 6: Upper Limits to the Total Time for Large Proposals.

If several large proposals for a given telescope are highly rated by the skeptical review panels, the NRAO Director should seek advice from a cross-disciplinary subset of the regular proposal referees about upper limits to the fraction of all observing time that should be devoted to them. Any policy statement about such upper limits must emphasize they will not be interpreted as "quotas" to be filled with large projects, however.

RECOMMENDATION 7: Announcements of Opportunity

The NRAO should not make Announcements of Opportunity for the submission of large proposals. Large proposals should be submitted at the normal proposal deadlines, without special solicitation by the observatory.

<<< FULL REPORT >>>

1. Is a "large proposal" policy needed at the NRAO?.

We believe that it is. Our reasons for concluding this are twofold:

(a) Large projects will (by any definition) be ones that impact other NRAO users' work to an unusual extent. The NRAO should therefore have a process that can reassure its users that the few large projects which do get scheduled have met unusual standards of scientific importance and of uniqueness, and also that they are of finite length. To the extent that the constraints imposed on 'standard' proposals by the VLA surveys have been widely accepted, there is consensus not only that these surveys are scientifically important but also that they could only have been done with the VLA. It is also important that the proposed disruption to other work ends eventually. We believe that the NRAO must be able to show that it is carefully balancing the scientific worth of large projects against their impact on smaller ones when making future decisions about scheduling large projects. We suggest that a key ingredient in this will be a more extensive

"skeptical review" process for proposals that are above a certain threshold.

(b) Most large projects will also generate databases that are of interest to a large community of astronomers. It is therefore appropriate to seek that community's advice about the scope of a large project, about its data selection parameters, about data reduction methods, and about archiving and dissemination plans. A further, and possibly ongoing, "expert review" of large projects may therefore also be needed once they have passed initial "skeptical review". We also note that some large projects are merely long projects (e.g. large sample studies in which the individual observations are not especially challenging) but others may push the limits of the instrumentation in sensitivity, data rate or data volume. The latter may benefit from expert technical advice from an expanded community at an early stage of planning.

We do not see how the NRAO could address either of the above areas satisfactorily just by extending the normal proposal review process to projects of arbitrarily large scope. We do not see how to measure the breadth of support for large proposals, or to satisfy the user community that their observing parameters have been optimized, without having a threshold above which proposals get extra initial scrutiny. Thus, a new policy is needed.

It also seems clear that no single-forum review could addressing all of the above issues well. Our proposal for a new policy has several optional stages (after the initial review) to deal with this.

The first question in the charge to the Committee also asked us whether, if a new policy is needed, it should be written down and disseminated. It will be important to strike an appropriate balance between (a) clarifying the observatory's future intentions about large projects and (b) specifying a policy in detail now that proves to be ill-suited to particular cases in future, or which is unnecessarily burdensome either to proposers or reviewers. We therefore seek an approach that has built-in flexibility, but which can and should be written down and disseminated to the user community.

RECOMMENDATION 1:

The NRAO should have a written, disseminated, policy for the treatment of large proposals. It is important however that this written policy be flexible enough to cover a wide range of circumstances.

2. A threshold for an enhanced "skeptical review".

"Normal" proposals are reviewed by small specialized panels of discipline experts from outside the NRAO. A favorable review from within the discipline is a necessary, but we believe an insufficient, condition for scheduling a "large" proposal. A project large enough to significantly constrain work in other areas of astronomy should be

asked to impress a review panel that also includes astronomers whose work will not directly benefit from the project's final database.

Such an initial review should ask (a) whether a large proposal has tigh enough scientific priority to warrant the displacement of normal work in other areas, and (b) whether the proposal is well suited to the NRAO telescope (particularly, that it is not better suited to some other radio telescope).

An important ingredient in community acceptance of large proposals that displace other research significantly is that the duration of the large proposal is well understood, finite, and commensurate with the scientific priority of the project. It is therefore important to establish before a project begins that a specific (finite) grant of observing time is involved, and that any extension beyond this must be re-applied for either through the normal proposal process (if small) or by further skeptical review (if large).

The review panels should also be asked to advise about the appropriateness, and length, of any proprietary "holding time" for the data from large proposals. It is essential that the proposers and the user community clearly understand what has been agreed about the time scale of public release of data before a project is scheduled. Large proposals must therefore address this issue as part of their submission.

If the telescope is one on which dynamic scheduling is used, the "skeptical review" panel might also be asked to comment on whether a proposal is appropriate for use as part of that scheduling strategy.

The expanded "skeptical review" panels for large proposals should be drawn from people who are already refereeing other discipline areas for that telescope. For the single dishes, it may be necessary to augment the current referee group because there may not be enough current referees for the job. Past referees, and other cross-disciplinary experts, should then be co-opted.

The heart of our suggestion is therefore that any proposal exceeding some threshold (in hours, discussed quantitatively below) be reviewed first by a "skeptical review" panel drawn from the pool of proposal referees for that telescope, but representing all major astronomical sub-disciplines served by the telescope. This would allow some of the same referees who judge smaller projects to weigh their priority against those of any large projects that might use up all their time. It ensures that large projects will be judged in the specific context of their impact on the other work currently proposed for the telescope, by a group of people well positioned to do so.

The questions of (i) how to balance time awarded to large proposals against smaller proposals addressing the same science, and (ii) what guarantees (of priority over others with similar scientific intent) should be given to large proposals once they have been scheduled, are also best handled by panels whose members referee both large and small proposals. In other words, with the proposed composition of the skeptical review panels, questions of priority among large and small

proposals with similar science goals can be handled as they are now within the normal proposal process.

We strongly prefer this approach to that of having a separate standing committee of "large proposal reviewers" who do not participate in the normal proposal-review process. Such a separate committee would be less aware of the overall scientific context with which large proposal(s) would compete. Also, the act of setting up a separate process for reviewing large proposals could itself generate pressure to have some such proposals scheduled. We do not think this is desirable.

RECOMMENDATION 2: Expanded "Skeptical Review"

All proposals that ask for more observing time than a (telescope-specific) threshold, and, at the NRAO Director's discretion, some proposals requesting less time than this, should initially be evaluated by an expanded "skeptical review" panel of five or more referees.

The panel should be drawn from the normal pool of proposal referees for the telescope, augmented if necessary by others who have recently been proposal referees. The panel should be roughly balanced between "experts" in the astronomical sub-discipline addressed by the large proposal, and cross-disciplinary "skeptics".

The panel should
ssess:

(1) the scientific priority for the proposal in competition with all other astronomy that is being done at the telescope,

(2) whether the telescope is well suited to the proposal,

(3) whether the total duration proposed for the project is well-defined and commensurate with the scientific priority,

(4) whether there should be any proprietary "holding time" for the data, and, if so, for how long,

(5) whether the proposal is suitable for use as a backup project in a dynamic scheduling strategy for the telescope.

(also see Recommendation 5)

3. Setting Thresholds for Skeptical Review

At the VLA and VLBA:

We suggest that the threshold for an expanded initial review should be set in an explicitly "fuzzy" range of 200-300 hours of observing time. (300 hrs corresponds to about 2 weeks of schedule time if done in one session.) Since 1990, use of this criterion to trigger additional review would have affected only about one project previously treated as "standard" at the VLA, plus the two VLA surveys. It would have affected five previously treated as "standard" at the VLBA. (These statements are based on statistics for the VLA and VLBA furnished to us by Barry Clark.) The number of past proposals that would have been exposed to "skeptical review" remains modest wherever the threshold could be set in the few-hundred-hour range (for these telescopes).

At the 12-meter telescope:

We believe that the main criterion for setting the threshold is "significant displacement of other proposals", so a reasonable criterion is that the threshold should be around 10 times the mean length of scheduled proposals. A threshold around 1000 hours might therefore be more appropriate for the 12-meter telescope.

At the GBT:

In the case of the GBT, we can expect proposal pressure to be a strong function of time as new instrumental capabilities are commissioned. There may however be times early on when instruments are unexpectedly unavailable, and dynamic scheduling is needed. There may be good reasons to seek to combine some classes of large proposal with a dynamic scheduling strategy: e.g., some survey observations at low frequencies might be appropriate as "backup" projects at times when higher frequencies are unavailable due to weather or equipment problems. We suggest that a working group be established to examine such issues for large proposals at the GBT, both with regard to setting appropriate upper limits to the time allocation for large proposals, and with regard to their role in any dynamic scheduling strategy for the telescope.

Our main reason for suggesting a "fuzzy" threshold for the initial "skeptical review", i.e. an explicit statement that discretion will be exercised by the NRAO in applying the criterion, is to discourage attempts to avoid the process by tailoring proposals to be just under a strict threshold.

RECOMMENDATION 3: Thresholds

For the VLA and VLBA, the threshold for skeptical review should be around 300 hours of observing time. For the 12-meter telescope, it should be around 1000 hours. For the GBT, the threshold should change as new instruments and higher-frequency capabilities are commissioned, and will need continual review. In all cases, these thresholds should be explicitly "fuzzy", i.e. the policy should make it clear that the

NRAO Director has the option to send some proposals below these thresholds for expanded "skeptical review".

4. Should Proposers be able to "Volunteer" for Skeptical Review?

Some 200-300 hour projects have already been done at the VLA and VLBA via series of consecutive proposals for 100 or so hours. This approach provides a way to do moderate-sized projects through the normal channels. We see no reason to discourage it. It amounts to an ongoing, but not guaranteed, grant of observing time on the basis of demonstrable progress, with the review time scale being set by the proposers' success with, and capacity for, the project.

This approach may not be well-suited to all moderate-sized projects, however. Data subsets or pilot projects do not always produce good science. Doing a moderate-sized project piecemeal so as to maximize short-term "excitement" at proposal deadlines may distort its overall strategy. Some VLA observations of source samples that interest a wide community have been fragmented into small proposals carried out by different groups. The resulting loss of homogeneity limits the long-term benefit to the community, which would be better served by the data produced by a small number of moderate-sized and well-coordinated proposals rather than a large number of small, independent ones. (VLA observations of the 3CR continuum sources, and of galactic water vapor masers are particular examples of this known to us.)

The "volunteer" mechanism may also be appropriate for proposals that require coordinated observing at several telescopes. A "skeptical review" committee might be better able to evaluate the whole plan, rather than leaving each part for independent (un-coordinated) review through different channels in the normal proposal processe

We therefore see some merit in inviting proposers to volunteer projects of moderate size (100-300 hrs) for the enhanced "skeptical review". This might be a way for a proposer to ensure that moderate-sized proposals obtain all the time that they need (regardless of graduate student involvement or the status of intermediate results). It might also encourage attempts to produce more homogeneous, moderate-sized databases that would benefit a wider community. Success in such proposals would also allow proposers to marshal resources (staff, computer resources, funding, etc.) better for moderate-sized projects, simply by clarifying that all of the requested observing time would be granted (the current "will be considered further" status at the VLA leaves some uncertainties hanging over proposals in the present queue.) The fact that a proposal had successfully passed a more demanding skeptical review process at the NRAO could make it more attractive to funding agencies.

PI's will therefore have some incentives to "volunteer" for extra review, and it seems advantageous to offer this possibility as an

option. We should however aim for a situation wherein only a small minority of all proposals goes for "skeptical review". This goal could be reached by holding proposals that undergo skeptical review to a significantly higher standard, in recognition of the greater long-term commitment that would be made to successful ones. (This has happened with the "key projects" category at the KPNO, where the success rate is small.)

RECOMMENDATION 4: Volunteering for Skeptical Review

Proposers of "moderate-sized" (below-threshold) projects may also volunteer for expanded "skeptical review" of their proposals. This option provides a way to obtain a stronger guarantee of observing time for moderate-sized projects whose science could clearly be advanced by receiving such guarantees, in return for submitting them to a more demanding initial review. We emphasize that we see this as an option to be used rarely, and only in exceptional cases where the science would suffer if the project was done piecemeal through the regular proposal process.

5. "Expert Review" - Ongoing Monitoring and Supervision.

Some, but not necessarily all, large projects, may need further review by more a narrowly-focussed expert panel before they are scheduled.

The impact of large proposals on other NRAO users requires us to ensure that their observing techniques and time allocations are optimized both to the science and to the telescope involved, and that the final databases are made available promptly and in scientifically robust forms.

The main areas in which further expert review may be appropriate before a project is scheduled are:

a) "Up front" scientific issues: sample definition and selection, sensitivity limits, extent of sky coverage. These are areas where it is appropriate to show that some consensus has been achieved , or at least that advice has been obtained, from across the astronomical sub-discipline most concerned with the proposal.

b) "Up front" technical issues: optimal data acquisition strategies, organization of observing time, instrumental limitations or other on-line issues which may have a strong engineering or operational component. In some cases, it may be important to require a pilot or demonstration project to prove an observational technique before going ahead with the project as initially proposed. This area may require review by a group that involves scientists, engineers familiar with the instruments, and telescope operations staff.

Ongoing review of a project after it has been started may also be appropriate, to monitor

a) Data-processing progress. Ongoing review may particularly appropriate for projects whose data volume presents a major computing challenge. If such review is required, the supervision should be "strong". By this we mean that the review panel must be able to recommend withholding later instalments of observing time if the project does not meet data-processing targets (quality and speed of the data analysis) in a timely way. Such a panel will in effect re-referee the project while it is in progress, and could recommend no further time allocation if agreed data-processing milestones were not met.

b) Construction of an accessible public repository for data products. If a big community's observing time is "taxed" to make room for large projects, then that community should expect to share the benefits of the final database quickly. This implies a review process aimed at ensuring prompt access to calibrated data whose quality are uniform and well-understood. It also requires that large proposals clearly state their plans for public access to the data (and the nature of the proposed data products) in order to be sent for skeptical review. If ongoing "expert" review of the data products is required, it would typically be done by a panel with a mix of scientific and computer expertise.

To the extent that any of these issues apply to a particular large proposal, they imply review by groups different in composition from the initial "skeptical review" panel. Unlike this panel, which should be cross-disciplinary and is probably best drawn from the existing (external to NRAO) referee pool, "expert review" panels would benefit by including people who are not currently acting as NRAO referees. They could include NRAO scientific and technical staff with special knowledge about the telescope, the science, or data processing relevant to the proposal. Some would need to be ongoing, and these might use a range of formats, including telephone conferences, face-to-face meetings or workshops, that are not traditionally used for proposal refereeing at the NRAO.

We emphasize that not all "large" projects should need exposure to all of the above forms of ongoing monitoring and supervision. It is likely that all projects above some very large (1000-hour ?) threshold should have some ongoing supervision by an ad hoc "expert panel". But length of observing time alone is not the only criterion for whether ongoing expert review is necessary. The technical "degree of difficulty" of the project is clearly significant. For example, proposals that are straightforward in terms of observing technique and data analysis, but which require 'simply' large amounts of time, might be selected on the basis of a favorable evaluation of the skeptical review committee. But a proposal which challenges the current technical frontier (Zeeman work on the GBT, a dramatic new pulsar search strategy) and which requires an extensive block of time should surely be reviewed by a group with a strong technical background before being scheduled.

It is important that contentious areas, e.g. "research" issues about data processing, etc. should not be allowed to stymie progress on a proposal. Issues such as timely completion and accessible archiving of the data will be important for many large proposals, however.

The heart of the issue here is that the style and extent of any ongoing supervision of large projects should be determined on a case-by-case basis. Any policy that is written down now should simply define a process that is flexible enough to make this case-by-case determination. It should not try to anticipate all of the possible supervisory issues in advance (though we have pointed to a few above).

We therefore suggest that when a "skeptical review" panel for a proposal assigns it high scientific priority, they should also recommend whether the proposal should be subject to further expert review, and if so in what areas. The scope and style of any further review process should however be decided by the NRAO Director. with advice from any other appropriate sources. It is important that the process begin with input from representatives of the whole astronomical community served by the telescope involved, but the "skeptical review" panel should neither be expected to, or expect to, specify the entire subsequent review process.

(We note parenthetically that in discussing this area, we were guided by the recent experience with the two VLA surveys. We understand that there were significant technical issues that had to be settled for each of the surveys, primarily in the area of data analysis. We also believe that the community relied on the survey oversight committee(s) to ensure that the data were made readily available to the public in a timely manner. Perhaps this would have occurred anyway, but we believe that it was helpful to have a mechanism in place to strengthen the resolve of the PI's!)

RECOMMENDATION 5: Ongoing "Expert" Review.

The skeptical review panel for a large proposal should also advise the NRAO Director whether any further "expert" review of the proposal is needed in four main areas:

- scientific issues of observing strategy,
- technical issues of observing strategy and data acquisition,
- ongoing review of project progress, and,
- public availability of the data products.

Not all large proposals will require further review in all of these areas, and many may not require further review at all. If a highly-rated large proposal is of sufficient scope or technical complexity to warrant ongoing review, the NRAO should make every effort to achieve this without over-burdening either the proposers or the expert referees. The arrangements for any ongoing "expert review" would be made at the discretion of the NRAO Director on a case-by-case basis.

6. Should an Over-all Upper Limit be set to the Time Available for Large Projects?

There must be some upper limit, or we could have a situation where all the time goes to a few large projects -- an inappropriate asymptote for a national facility with a large, diverse user base.

The limits should be expected to vary from telescope to telescope, and with time at any given telescope, just as the overall proposal pressures vary in response to major changes in instrumentation, to discipline-wide shifts in astronomical emphasis, or to astronomical transients such as supernovae and comets.

In general, we feel that while the over-subscription rate on a telescope remains under 2:1, the question of exactly how upper limits are set for large proposals may not be too pressing. But if a large proposal or proposals raise the over-subscription rate much over 2:1, their effects would likely be noticeable across a broad community and the upper-limit question would be more pressing.

For the more heavily over-subscribed facilities such as the VLA, VLBA, and GBT (presumably) the appropriate upper limits would be below those appropriate for instruments such as the former 300-ft, the 140-ft and the Green Bank interferometer in the years before their shutdown. In the later years of a telescope's operation, doing large-scale surveys becomes attractive for operational, as well as scientific, reasons. (Simplifying telescope schedules and minimizing equipment changes are often good operational strategies as a facility ages).

Within this committee, our thresholds for discomfort about large proposals displacing smaller ones on an instrument in the prime of its scientific life ranged from 1/6 to 1/3 of the total observing time. (Large projects that require time in the most "popular" LST ranges for galactic and extragalactic work would obviously constrain other work more severely than those with intrinsic LST flexibility.)

We have concluded however that it is probably inappropriate for us to go beyond this, to assess general large-proposal upper limits for any particular telescope as part of this report. Instead, we wish to recommend how such an assessment should be obtained for any telescope when it is needed.

In our opinion, the best group to assess this issue would be a cross-disciplinary panel of scientists with access to the statistics of observing time requests from, and an appraisal of the scientific vigor in, the different sub-disciplines that dominate the proposal demand at the telescope. This description matches that of the "cross-disciplinary" parts of our proposed "skeptical review" panels.

We also believe that advice on upper limits to the observing time for large proposals will be needed only on the (presumably rare) occasions when more than one large proposal at a time is highly rated by the

skeptical review panels for a given telescope. We therefore suggest that, on these occasions, the NRAO Director seek such advice from the cross-disciplinary cohort of those skeptical review panels.

It is important that any such upper limits that are established at such times not be re-interpreted later as quotas of time that "should" be filled by large proposals. High scientific priority based on reviewing proposals that were initiated on the "open market" by users should be the driver for assigning time to a large proposal in competition with smaller projects.

RECOMMENDATION 6: Upper Limits to the Total Time for Large Proposals.

If several large proposals for a given telescope are highly rated by the skeptical review panels, the NRAO Director should seek advice from a cross-disciplinary subset of the regular proposal referees about upper limits to the fraction of all observing time that should be devoted to them. Any policy statement about such upper limits must emphasize they will not be interpreted as "quotas" to be filled with large projects, however.

7. Announcements of Opportunity

The committee considered whether the NRAO should explicitly solicit proposals for large projects via Announcements of Opportunity, either targeted to specific disciplines or to special deadlines (other than those of the regular proposal process.)

It was our unanimous opinion that this would be undesirable.

It would separate "opportunities" for proposing large projects from the regular proposal process, whereas we see merit in keeping the processes for large and small proposals well-coupled. It is also hard to see what benefit would come by encouraging the whole user community to think about large proposals simultaneously.

The NRAO-operated telescopes are ground-based and flexible in their capabilities, so operational and planning considerations differ greatly from those needed to establish the scientific program of space-borne instruments, for example. The AO approach would however place some obligation on the NRAO to schedule some large projects after a period in which it had encouraged the whole user community to make proposals for them.

It is particularly undesirable to create an artificial imbalance between the pressures for large and regular proposals when our ultimate goal is to find an appropriate balance. We believe that balance is more likely to be achieved through a proposal process that

is driven mainly by the scientific interests of individual investigators, than through one driven by ad hoc deadlines.

RECOMMENDATION 7: Announcements of Opportunity

The NRAO should not make Announcements of Opportunity for the submission of large proposals. Large proposals should be submitted at the normal proposal deadlines, without special solicitation by the observatory.

From: abridle (Alan Bridle)
To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.td.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu
Subject: NRAO Large Proposals Committee: Jan. 6 meeting
Date: Mon, 6 Jan 1997 16:04:44 -0500

Once again, this is not a detailed minute, but rather a short summary of my notes from our telephone meeting on January 6th.

I hope they will help Fred Lo and Don Backer in particular to see which issues are still being worked on.

----------%<----------

Notes on phone meeting of Large Proposal Committee
Monday, January 6 1997, 11 am - 11.50 am EST

Present: Bridle, Churchwell, Haynes, Hewitt, Hogg

It was agreed that the draft report was in good shape overall, and that only minor details remained to be straightened out in Sections 1, 2, 3 and 7. We reduced the minimum size of the skeptical review committee that is mentioned in Rec.2 from 6 to 5.

Our main focus was on Recs. 4, 5 and 6.

Rec. 4 ("volunteering" for skeptical review)

- more agreement than before on the need for such a recommendation, so we focussed more on the wording than on the general intent
- wording of recommendation itself (not background discussion) should make it clear that this is targeted at exceptional cases where there is clear benefit to the science from having improved guarantees of observing time
- add some discussion to emphasize that use of this option should be rare and that proposals that elect it will be held to higher standards in return for their improved guarantees

Rec. 5 ("expert review")

- clarify in the recommendation that many proposals will not need to be exposed to all the steps,
- clarify that NRAO should try to minimize the review burden on all successful large proposals, not just the most

highly-rated ones (this is not a change of intent, but earlier wording gave the wrong message, as Fred had pointed out)

- emphasize in discussion that we expect all large proposals to contain a plan for public access to their data products, but leave it to the skeptical review process to recommend how this plan should be monitored (different approaches may be appropriate in different cases)

Rec. 6

- we revisited the over-subscription issue briefly, Dave Hogg reported from D. Emerson that 12-meter oversubscription is now about 1.65:1 by hours, 1.8:1 by number of proposals. General statistics for other telescopes will be kept (as of Jan 1 1997) but are unlikely to be available before our report is due

- no change to recommendation needed

How we proceed from here

- immediate redraft by AHB to incorporate these changes (done - this draft was in message preceding this one!)

- review by all on committee, response by E-mail to AHB by end of this week please

- further redraft following these comments will go to Paul Vanden Bout for his informal review

- if Paul has any major questions for us, will attempt to address these via a telephone conference in the January 21-24 window.

- if he has no major questions for us, we may be able to complete report by E-mail without any further conferences

- final report by end of January in either case!

Alan B.

From VM Tue Jan 7 10:08:14 1997
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1997 14:49:40 -0800 (PST)
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     id OAA18937; Mon, 6 Jan 1997 14:49:59 -0800
Message-Id: <199701062249.OAA18937@bkypsr2.Berkeley.EDU>
From: dbacker@bkypsr2.berkeley.edu (don backer 415 campbell 510-642-5128)
To: abridle@NRAO.EDU
Subject: Report
Date: Mon, 6 Jan 1997 14:49:59 -0800

Alan,

I apologize for being out of touch and not making the meeting this AM. After all my travels and work this Fall, I have taken time out to concentrate on one or two projects, ignore other responsibilities, and relax a bit. Hence I have just read through all the committee activity today. While the report is well advanced, I will read it carefully and add whatever comments I can.

One area that has not been discussed explicitly in the emails is the long term monitoring of time variable sources -- AGNs and masers for VLBA (and other telescopes); pulsars for single dishes; binary stars for VLBA/VLA. An object like 3C 84 evolves on decade time scales for example, and proper motions of some masers in external galaxies may only be detected over several years. I've been involved in timing an array of millisecond pulsars with one goal being the detection of gravitational radiation with wavelengths corresponding to years; this currently uses about 4x6x24 = 576 hours on the (aging rapidly) 140ft. This type of proposal, possibly by a consortium of pulsar-ologists, might well arise with GBT.

Potentially the 10-year projects could be nipped in the bud by placing a (flexible) limit on overall duration. I think that most of the above projects would be rejected/shunted to normal process for piecewise review. I'll think some more on this as I read through your latest draft.

Don

From: dbacker@bkypsr2.berkeley.edu (don backer 415 campbell 510-642-5128)
To: abridle@NRAO.EDU
Subject: some thoughts on draft
Date: Mon, 6 Jan 1997 23:03:52 -0800

Dear Alan & Committee:

I have (finally) read through the (lengthy) DRAFT REPORT. The recommendations are solid and will serve the director and referees and community well. Here are some comments; recommendations are in CAPS:

[1] There's an issue that I think is not treated which we may want to consider. This is the duration of a proposal which is particularly an issue for monitoring programs. In this area consider VLBI observations of extragalactic masers for proper motion/H_o studies, monitoring AGNs at multiple wavelengths through repeated outbursts to search for effects of precession, following galactic binaries like SS 433 or the new BHoles or Cygnus X-3, timing an array of millisecond pulsarss to search for primordial gravitational radiation. In stating the total hours limit repeatedly throughout the draft there are no firm statements or guidelines about the number of rears for execution of the proposals. Yet when large is defined for the 12m for ex it is taken to be 10 times the average proposal size, which I take to mean average single season proposal; hence large is 10 times per annum amount. Does this imply that a multiyear proposal for a total of 1000 hours, but only 300/year would be special or normal? Or does 12m already disallow multiyear proposals?

When I was involved with US VLBI Network we had a scream for "large" proposals (from large/established groups). They knew that they wanted to monitor 3C 345 for several years, several times per year at several frequencies; or they knew that they wanted to image a complete sample fo 5 GHz sources to test the standard model. Their NSF proposals stated that they would do this. They had the wherewithall (focus, ability, etc) to do so. The VLBN Consortium agreed to about 25% of the time (which by the way was from an amount conceded to the Consortium by the NRAO and other observatories) being spent on these ongoing projects. The Consortium consented with the proviso that an annual progress report was required and reviewed by the VLBN referees. In essence these reports were very close to new proposals most of the time. A lot of wind would have been saved if the PIs just trusted their ability to demonstrate progress in a timely fashion and gotten on with business rather than trumpeting about in VLBN meetings about their needs. So I think that most lengthy monitoring projects, even if they need years to resolve results, can be handled in normal fashion. Their progress can be demonstrated by intermediate results and conference reports. A sensible thing is for them to create their own milestones by which they can be judged in subsequent proposals -- demanding but simple device.

I note that under item (1a) we discuss "finite length" and later that work "ends eventually". I PROPOSE THAT WE USE OF DURATION 1-3 YEARS IN PLACE OF FINITE LENGTH; THEN DELETE SENTENCE WITH WISHY/WASHY ENDS EVENTUALLY AS BEING REDUNDANT. This initial paragraph is negative

in that what defines a large proposal is not its large grand or multifacted
goal but its negative impact on all the normal proposals. This is repeated
in (2) by using "displacement of normal work". Can we agree to say that:
PROPOSALS THAT OWING TO THEIR UNUSUAL SCOPE AND SCIENTIFIC IMPORTANCE
REQUIRE AN AMOUNT OF OBERVING TIME PER ANNUM WHICH WILL DISRUPT NORMAL
SCHEDULING OF ALL USERS WILL BE CONSIDERED "LARGE".

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to a "large" project is (a) a single, well defined hypothesis that is
to be explored with an answer like yes or no, or 53 on a scale from 0 to 100;
(b) a large data collection effort with fundamentally broad use.
The MACHO project is an example of (a) and the FIRST/NVSS surveys are
of (b). Implicitly I think efforts of type (a) would yield results of
type (b). Again the MACHO collection of data on variable stars and their
impact on halo mass models are examples. Both are likely to have the
serindipity factor that was important in the discovery of pulsars for ex.
In contrast AGN monitoring data is much more restricted in scope of
data collected and audience for pawing through its data base.
Hence in (1b) I would start with:
IT IS EXPECTED THAT LARGE PROJECTS WILL GENERATE DATABASES...

[3] In 3rd paragraph of item (2) there is some confusion regarding pilot
experiments. Does one submit proposal, get skeptical review, then
proceed with pilot, then resubmit proposal for second skeptical review?
Seems then that the recommendation to PIs in stating policy is for them
to conduct pilot experiment as normal proposal (in most cases and if warrented)
to make solid case for large proposal. This is a detail of course.

[4] The section on dynamic scheduling in (2) and (3) seems like a detail
that can be handled under general guidelines. So if you want to cut...

[5] I would think that skeptical review panel might generally allow
"ONE OR TWO RECENT REFEREES" in general to expand pool to particularly
placed individuals yet keeping to those with fresh experience of community
needs.

[6] In (6) I would mention that the User's Meeting is a forum for discussion

Again, my apologies for being a laggard these past two weeks...

Don
From VM Tue Jan 7 11:47:16 1997
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To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,
      haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
      kyl@sgr.astro.uiuc.edu
Subject: forwarded message from don backer

Date: Tue, 7 Jan 1997 10:09:36 -0500

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id OAA18937; Mon, 6 Jan 1997 14:49:59 -0800
Message-Id: <199701062249.OAA18937@bkypsr2.Berkeley.EDU>
From: dbacker@bkypsr2.berkeley.edu (don backer 415 campbell 510-642-5128)
To: abridle@NRAO.EDU
Subject: Report
Date: Mon, 6 Jan 1997 14:49:59 -0800

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------- end -------

From: abridle (Alan Bridle)
To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
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Message-Id: <199701070703.XAA19088@bkypsr2.Berkeley.EDU>
From: dbacker@bkypsr2.berkeley.edu (don backer 415 campbell 510-642-5128)
To: abridle@NRAO.EDU
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Date: Mon, 6 Jan 1997 23:03:52 -0800

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Don
------- end -------

From: "David Hogg" <dhogg@polaris.cv.nrao.edu>
To: abridle@polaris.cv.nrao.edu (Alan Bridle)
Cc: dbacker@astron.Berkeley.EDU, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu,
kly@sgr.astro.uiuc.edu, dhogg@polaris.cv.nrao.edu (David Hogg)
Subject: Jan 6 Draft
Date: Tue, 7 Jan 1997 16:54:58 -0500 (EST)

Dear Alan,
I have no suggestions for change to the latest draft of the
report. I think that it is ready to go to Paul for his initial
reaction, as you described in your note.
Dave

From: churchwell@madraf.astro.wisc.edu
To: ABRIDLE@NRAO.EDU, DHOGG@NRAO.EDU, HAYNES@ASTROSUN.TN.CORNELL.EDU,
JHEWITT@MIT.EDU, KYL@STR.ASTRO.UIUC.EDU, DBACKER@astron.Berkeley.EDU
Subject: NRAO Large Proposals
Date: Thu, 09 JaJ 1997 16:29:03 EST

Alan,
The Jan. 6th draft of the NRAO Large Proposals Committee
looks fine to me. I only noted a couple of items of minor
importance. In the "Full Report" I'm not sure Don's concern
with the use of "finite" and "eventually" has been met (i.e. not
specific enough).
Perhaps you might want to use-- "---they are of a definite length."
and "---ends at a well defined time.
The following are a few typos.
1. (b) In paragraph beginning "It also ---could address all--"
5., 1st par, l2-"by a more narrowly---"
furthr down the page a), l1--"review may be particularly---"
As I said, you did a very nice job on behalf of us.
I will be interested in Paul's response to the report.
Best, Ed
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abridle@nrao.edu; Thu, 9 Jan 1997 20:38:52 -0500
Message-Id: <199701100138.UAA03729@vieques.tn.cornell.edu>
From: Martha Haynes <haynes@astrosun.tn.cornell.edu>
To: abridle@NRAO.EDU
Subject: draft
Date: Thu, 9 Jan 1997 20:38:52 -0500

Dear Alan,

I think the report is fine as a draft, and that the
next step should be to run it by Paul.

Regards,

Martha
From VM Mon Jan 6 08:49:04 1997
X-VM-v5-Data: ([nil nil nil nil nil nil nil nil nil]
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From: jhewitt@maggie.mit.edu
To: abridle@NRAO.EDU
Subject: Phone meeting at 11:00 on Tues
Date: Sun, 5 Jan 97 12:19:46 EST

is fine with me.
From VM Mon Jan 6 08:49:04 1997
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From: jhewitt@maggie.mit.edu
To: abridle@NRAO.EDU
Subject: Correction
Date: Sun, 5 Jan 97 12:20:10 EST

Make that Monday. Also fine.
From VM Tue Jan 14 13:31:35 1997
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Message-Id: <9701141705.AA79797@polaris.cv.nrao.edu>
From: abridle (Alan Bridle)
To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,

haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu
Subject: Draft report
Date: Tue, 14 Jan 1997 12:05:21 -0500

Thank you all for your comments on the draft report.

I have now given a copy of the draft to Paul Vanden Bout for his
review.

If he has anything that he would like to discuss with us after
seeing the draft, I will try to schedule a telephone conference
in the window January 21-24.

If there is no need for that, I will finalize the report by
E-mail as soon as possible.

Alan B.

From VM Wed Jan 22 16:29:29 1997
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From: abridle (Alan Bridle)
To: dbacker@bkypsr2.berkeley.edu
Subject: NRAO Large Proposals Committee
Date: Wed, 22 Jan 1997 15:51:29 -0500

Hi Don, my top priority re the draft report was to get Paul Vanden
Bout's reaction to it in order to gauge whether there would be
anything in there (or not in there!) that he would see as a potential
problem. In fact he has just told me that he is happy with it as it
stands, with one quite minor modification which I will write to all
the committee about following this.

The version I gave him did not contain any changes based on your
comments from Jan. 6th as the preponderance of advice I got from the
committee was to get the draft to Paul as soon as possible to "test
the waters". As you seemed happy with the overall form of the report,
I concentrated on doing that as fast as I could.

I would however like to address your comments now, in the context of
winding our work up quickly as Paul is perfectly happy with the
direction we are suggesting.

Your main concern was about long monitoring programs, and took me a
bit by surprise as we did not say anything to exclude that. In fact a
long monitoring program that does not use a large fraction of the time

in any short period is a particularly easy case to handle, as the effect on scheduling of other projects can be small, and it is mainly the overall duration that has to be guaranteed; I would expect that to be handled by the scientific review -- e.g., is a decade of data enough or too much for the scientific goal? Your suggestion that we actually replace "of finite length" with an actual duration limit (1-3 years) frankly puzzles me, as this would force ongoing review of such long projects. Does that not make it harder, rather than easier, to get some guarantee of time for a long-term monitoring project?

On your second point, I agree that we end up saying a lot about "large" meaning disruption of other work but that is of course precisely why the committee was necessary, it is the scheduling disruption that causes the concern. We have said quite a few places in the report that "large" may mean long, or data-intensive, or many other things, but the clear criterion in the end is scientific merit and the need for such a "large" project to meet specific scientific goals. So I did not quite see how your second and third suggestions (in caps) would change the thrust of what we were saying. Perhaps we need to discuss this by 'phone, would there be a convenient time for you later today or tomorrow?

Re pilot projects, this was not an issue on which we were trying to generalize; the point is that we would expect the initial skeptical review panel to advise on whether a pilot project might be needed, and whether an expert panel should supervise or evaluate it. I can well imagine that different projects will raise different sorts of questions so that in some cases the pilot project might be regarded only as a milestone on the way following in the intital review, but in others it might be understood that there would be a re-review after the pilot project. This strikes me as an area where the policy should not be spelled out too much in advance, but worked on a case-by-case basis. Our mention of pilot projects is just to point out that they may be one of the issues about which advice is needed...

Re dynamic scheduling, it could be a big issue for GBT and as the next phase of this will be for all the AD's to read and comment on our final report, I think it's worth reminding them that there's a linkage between large proposals and dynamic-scheduling plans that is worth some thought. We don't spend a lot of space on it, but it does get it on the table, so I'm inclined to leave it in.

Re "recent referees" being added to the skeptical review panels, we do actually say that in recommendation 2, so I may be missing something in your intention there.

Re mentioning the Users' meeting, just where would you add a comment about that? We are making quite a point about keeping the large proposal process closely coupled to the normal refereeing process, so our thrust has been to emphasize that most of our recommendations imply an expanded role for the normal cohort of referees. Did you have something explicit in mind re involving the Users' Committee, or just a reminder that is a group from which to get advice, at least informally?

I'd like to finish thic up in a few days (and certainly before the VLA proposal deadline!) so if you can get back to me soon on these things I would much appreciate that.

Thanks again,

Alan B.

From VM Wed Jan 22 16:29:29 1997
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id AA13938; Wed, 22 Jan 1997 16:22:48 -0500
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From: abridle (Alan Bridle)
To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu
Subject: NRAO Large Proposals Committee
Date: Wed, 22 Jan 1997 16:22:48 -0500

I met with Paul to discuss his reaction to our draft report earlier today.

He would be happy to have it as it stands, with one small modification.

Because he may use the recommendations as a separate (abstracting) document he would like one more of our ideas to be an explicit recommendation, namely to add a further "bullet" in rec.2 saying (about the skeptical review panel):

o The panel will provide the NRAO Director with a recommended course of action and a summary of its deliberations.

This of course matches our intent, it just makes it an explicit part of a recommendation, so that this would be obvious to anyone who reads the recommendations without our full report. (The recommendations alone are likely to go into the NRAO Newsletter, for example).

Given his favorable reaction to our draft, I suggest that we now try to wind up our work without having another phone meeting, i.e. by E-mail and/or individual phone calls.

Don Backer sent a message soon after the phone meeting expressing some concerns about our wording in the context of long monitoring programs. I was concerned that his suggestion of placing a 1-3 year time limit on proposal durations rather than just requiring that the large proposals be "of finite length" (as we do now) would actually make the process harder for long programs. I do not think there is anything in

our present wording that precludes a proposal from asking for ten years of monitoring if the proposers feel they can make the case that a 10-yr time-scale is scientifically necessary time-scale. So I am inclined to leave the wording alone on this matter. But if anyone else has a view on this point, it would be good to hear it soon!

Coud you please tell me by noon EST next Monday (27th Jan) whether there are any changes you would now like to see in the report, and if so, specifically what they are? Are you happy to add Paul's suggested "bullet" to our recommendation 2?

Assuming that no new problem areas surface from this, my goal is to give Paul our final report by the end of the month.

I will send a 70k postscript file with the tidied-up version of the draft report (as Paul read it) as another E-message. If anyone has a problem printing this, let me know and I will also send a plain ASCII copy.

Alan Bridle

From VM Wed Jan 22 16:59:43 1997
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From: abridle (Alan Bridle)
To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu
Subject: Postscript file of report draft
Date: Wed, 22 Jan 1997 16:37:10 -0500

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memory)def
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/ioerror(input/output error occured)def end{end}if errordict begin
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add y moveto dup type/stringtype ne{(max err string)cvs}if show}forall
showpage}if end}def end}bd end
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407 617 1588 (DRAFT REPORT OF THE NRAO LARGE PROPOSALS COMMITTEE) 1588 SB
gr
32 0 0 50 50 0 0 0 45 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
979 971 444 (Alan H. Bridle \(Chair\)) 444 SB
gr
gs 2394 2720 0 247 CB
1022 1030 358 (Donald C. Backer) 358 SB
gr
gs 2394 2720 0 247 CB
973 1089 455 (Edward B. Churchwell) 455 SB
gr
gs 2394 2720 0 247 CB
1022 1148 357 (Martha P. Haynes) 357 SB
gr
gs 2394 2720 0 247 CB
993 1207 416 (Jacqueline N. Hewitt) 416 SB

gr
gs 2394 2720 0 247 CB
1050 1266 301 (David E. Hogg) 301 SB
gr
gs 2394 2720 0 247 CB
1042 1325 317 (K. Y. \(Fred\) Lo) 317 SB
gr
gs 2394 2720 0 247 CB
1037 1738 328 (13 January 1997) 328 SB
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874 313 54 (Summary of recommendations) 654 SB
gr
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303 572 871 (RECOMMENDATION 1: The Need for a Policy) 871 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
303 672 1637 (The NRAO should have a written, disseminated, policy for the treatment of large proposals. It is) 1637 SB
gr
gs 2394 2720 0 247 CB
303 722 17r1 (important, however, that this written policy be flexible enough to cover a wide range of circumstances.) 1731 SB
gr
32 0 0 42 42 0 0 0 39 /Times-Bold /font29 ANSIFont font
gs 2394 2720 0 247 CB
303 922 1028 (RECOMMENDATION 2: Expanded "Skeptical Review") 1028 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
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303 1022 1732 (All proposals that ask for more observing time than a \(telescope-specific\) threshold, and, at the NRAO) 1732 SB
gr
gs 2394 2720 0 247 CB
303 1072 1725 (Director's discretion, some proposals requesting less time than this, should initially be evaluated by an) 1725 SB
gr
gs 2394 2720 0 247 CB
303 1122 995 (expanded "skeptical review" panel of five or more referees.) 995 SB
gr
gs 2394 2720 0 247 CB
303 1222 1699 (The panel should be drawn from the normal pool of proposal referees for the telescope, augmented if) 1699 SB
gr
gs 2394 2720 0 247 CB
303 1272 1703 (necessary by others who have recently been proposal referees. The panel should be roughly balanced) 1703 SB

gr
gs 2394 2720 0 247 CB
303 1322 1620 (between "experts" in the astronomical sub-discipline addressed by the large proposal, and cross-) 1620 SB
gr
gs 2394 2720 0 247 CB
303 1372 389 (disciplinary "skeptics".) 389 SB
gr
gs 2394 2720 0 247 CB
303 1472 416 (The panel should assess:) 416 SB
gr
gs 2394 2720 0 247 CB
453 1572 1530 (the scientific priority for the proposal in competition with all other astronomy that is being) 1530 SB
gr
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303 1572 19 (\267) 19 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
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453 1622 361 (done at the telescope,) 361 SB
gr
gs 2394 2720 0 247 CB
453 1722 867 (whether the telescope is well suited to the proposal,) 867 SB
gr
32 0 0 42 42 0 0 0 42 /Symbol font
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303 1722 19 (\267) 19 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
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453 1822 1524 (whether the total duration proposed for the project is well-defined and commensurate with) 1524 SB
gr
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303 1822 19 (\267) 19 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
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453 1872 364 (the scientific priority,) 364 SB
gr
gs 2394 2720 0 247 CB
453 1972 1565 (whether there should be any proprietary "holding time" for the data, and, if so, for how long,) 1565 SB
gr
32 0 0 42 42 0 0 0 42 /Symbol font
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303 1972 19 (\267) 19 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
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453 2072 1559 (whether the proposal is suitable for use as a backup project in a dynamic scheduling strategy) 1559 SB

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303 2072 19 (\267) 19 SB
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32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
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453 2122 286 (for the telescope.) 286 SB
gr
gs 2394 2720 0 247 CB
303 2222 507 (\(Also see Recommendation 5\)) 507 SB
gr
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303 2422 682 (RECOMMENDATION 3: Thresholds) 682 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
303 2522 1794 (For the VLA and VLBA, the threshold for skeptical review should be around 300 hours of observing time.) 1794 SB
gr
gs 2394 2720 0 247 CB
303 2572 1740 (For the 12-meter telescope, it should be around 1000 hours. For the GBT, the threshold should change) 1740 SB
gr
gs 2394 2720 0 247 CB
303 2622 1768 (as new instruments and higher-frequency capabilities are commissioned, and will need continual review.) 1768 SB
gr
gs 2394 2720 0 247 CB
303 2672 1699 (In all cases, these thresholds should be explicitly "fuzzy", i.e. the policy should make it clear that the) 1699 SB
gr
gs 2394 2720 0 247 CB
303 2722 1717 (NRAO Director has the option to send some proposals below these thresholds for expanded "skeptical) 1717 SB
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gs 2394 2720 0 247 CB
303 2772 140 (review".) 140 SB
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303 263 1100 (RECOMMENDATION 4: Volunteering for Skeptical Review) 1100 SB
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32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
303 363 1698 (Proposers of "moderate-sized" \(below-threshold\) projects may also volunteer for expanded "skeptical) 1698 SB
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gs 2394 2720 0 247 CB

303 413 1743 (review" of their proposals. This option provides a way to obtain a stronger guarantee of observing time) 1743 SB
gr
gs 2394 2720 0 247 CB
303 463 1704 (for moderate-sized projects whose science could clearly be advanced by receiving such guarantees, in) 1704 SB
gr
gs 2394 2720 0 247 CB
303 513 1702 (return for submitting them to a more demanding initial review. We emphasize that we see this as an) 1702 SB
gr
gs 2394 2720 0 247 CB
303 563 1740 (option to be used rarely, and only in exceptional cases where the science would suffer if the project was) 1740 SB
gr
gs 2394 2720 0 247 CB
303 613 901 (done piecemeal through the regular proposal process.) 901 SB
gr
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303 863 957 (RECOMMENDATION 5: Ongoing "Expert" Review) 957 SB
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gs 2394 2720 0 247 CB
303 963 1670 (The skeptical review panel for a large proposal should also advise the NRAO Director whether any) 1670 SB
gr
gs 2394 2720 0 247 CB
303 1013 1151 (further "expert" review of the proposal is needed in four main areas:) 1151 SB
gr
gs 2394 2720 0 247 CB
453 1113 636 (scientific issues of observing strategy,) 636 SB
gr
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303 1113 19 (\267) 19 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
453 1163 987 (technical issues of observing strategy and data acquisition,) 987 SB
gr
32 0 0 42 42 0 0 0 42 /Symbol font
gs 2394 2720 0 247 CB
303 1163 19 (\267) 19 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
453 1213 679 (ongoing review of project progress, and,) 679 SB
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32 0 0 42 42 0 0 0 42 /Symbol font
gs 2394 2720 0 247 CB
303 1213 19 (\267) 19 SB
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453 1263 658 (public availability of the data products.) 658 SB
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gs 2394 2720 0 247 CB
303 1263 19 (\267) 19 SB
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32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
303 1363 1771 (Not all large proposals will require further review in all of these areas, and many may not require further) 1771 SB
gr
gs 2394 2720 0 247 CB
303 1413 1714 (review at all. If a highly-rated large proposal is of sufficient scope or technical complexity to warrant) 1714 SB
gr
gs 2394 2720 0 247 CB
303 1463 1725 (ongoing review, the NRAO should make every effort to achieve this without over-burdening either the) 1725 SB
gr
gs 2394 2720 0 247 CB
303 1513 1791 (proposers or the expert referees. The arrangements for any ongoing "expert review" would be made at the) 1791 SB
gr
gs 2394 2720 0 247 CB
303 1563 960 (discretion of the NRAO Director on a case-by-case basis.) 960 SB
gr
32 0 0 42 42 0 0 0 39 /Times-Bold /font29 ANSIFont font
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303 1813 1412 (RECOMMENDATION 6: Upper Limits to the Total Time for Large Proposals) 1412 SB
gr
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gs 2394 2720 0 247 CB
303 1913 1775 (If several large proposals for a given telescope are highly rated by the skeptical review panels, the NRAO) 1775 SB
gr
gs 2394 2720 0 247 CB
303 1963 1650 (Director should seek advice from a cross-disciplinary subset of the regular proposal referees about) 1650 SB
gr
gs 2394 2720 0 247 CB
303 2013 1729 (upper limits to the fraction of all observing time that should be devoted to them. Any policy statement) 1729 SB
gr
gs 2394 2720 0 247 CB
303 2063 1717 (about such upper limits must emphasize they will not be interpreted as "quotas" to be filled with large) 1717 SB
gr
gs 2394 2720 0 247 CB
303 2113 306 (projects, however.) 306 SB
gr
32 0 0 42 42 0 0 0 39 /Times-Bold /font29 ANSIFont font
gs 2394 2720 0 247 CB
303 2363 1048 (RECOMMENDATION 7: Announcements of Opportunity) 1048 SB
gr

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303 2463 1792 (The NRAO should not make Announcements of Opportunity for the submission of large proposals. Large) 1792 SB
gr
gs 2394 2720 0 247 CB
303 2513 1658 (proposals should be submitted at the normal proposal deadlines, without special solicitation by the) 1658 SB
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gs 2394 2720 0 247 CB
303 2563 205 (observatory.) 205 SB
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303 313 1154 (1. Is a "Large Proposal" Policy Needed at the NRAO?) 1154 SB
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32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
303 422 1115 (We believe that it is. Our reasons for concluding this are twofold:) 1115 SB
gr
gs 2394 2720 0 247 CB
303 522 1712 (\(a\) Large projects will \(by any definition\) be ones that impact other NRAO users' work to an unusual) 1712 SB
gr
gs 2394 2720 0 247 CB
303 572 1761 (extent. The NRAO should therefore have a process that can reassure its users that the few large projects) 1761 SB
gr
gs 2394 2720 0 247 CB
303 622 1760 (which do get scheduled have met unusual standards of scientific importance and of uniqueness, and also) 1760 SB
gr
gs 2394 2720 0 247 CB
303 672 1712 (that they are of finite length. To the extent that the constraints imposed on 'standard' proposals by the) 1712 SB
gr
gs 2394 2720 0 247 CB
303 722 1751 (VLA surveys have been widely accepted, there is consensus not only that these surveys are scientifically) 1751 SB
gr
gs 2394 2720 0 247 CB
303 772 1661 (important but also that they could only have been done with the VLA. It is also important that the) 1661 SB
gr
gs 2394 2720 0 247 CB
303 822 1769 (proposed disruption to other work ends eventually. We believe that the NRAO must be able to show that) 1769 SB
gr
gs 2394 2720 0 247 CB
303 872 1741 (it is carefully balancing the scientific worth of large projects against their impact

on smaller ones when) 1741 SB
gr
gs 2394 2720 0 247 CB
303 922 1768 (making future decisions about scheduling large projects. We suggest that a key ingredient in this will be) 1768 SB
gr
gs 2394 2720 0 247 CB
303 972 1550 (a more extensive "skeptical review" process for proposals that are above a certain threshold.) 1550 SB
gr
gs 2394 2720 0 247 CB
303 1072 1594 (\(b\) Most large projects will also generate databases that are of interest to a large community of) 1594 SB
gr
gs 2394 2720 0 247 CB
303 1122 1657 (astronomers. It is therefore appropriate to seek that community's advice about the scope of a large) 1657 SB
gr
gs 2394 2720 0 247 CB
303 1172 1669 (project, about its data selection parameters, about data reduction methods, and about archiving and) 1669 SB
gr
gs 2394 2720 0 247 CB
303 1222 1794 (dissemination plans. A further, and possibly ongoing, "expert review" of large projects may therefore also) 1794 SB
gr
gs 2394 2720 0 247 CB
303 1272 1705 (be needed once they have passed initial "skeptical review". We also note that some large projects are) 1705 SB
gr
gs 2394 2720 0 247 CB
303 1322 1712 (merely long projects \(e.g. large sample studies in which the individual observations are not especially) 1712 SB
gr
gs 2394 2720 0 247 CB
303 1372 1790 (challenging\) but others may push the limits of the instrumentation in sensitivity, data rate or data volume.) 1790 SB
gr
gs 2394 2720 0 247 CB
303 1422 1710 (The latter may benefit from expert teahnical advice from an expanded community at an early stage of) 1710 SB
gr
gs 2394 2720 0 247 CB
303 1472 162 (planning.) 162 SB
gr
gs 2394 2720 0 247 CB
303 1572 1759 (We do not see how the NRAO could address either of the above areas satisfactorily just by extending the) 1759 SB
gr
gs 2394 2720 0 247 CB
303 1622 1753 (normal proposal review process to projects of arbitrarily large scope. We do not see how to measure the) 1753 SB
gr
gs 2394 2720 0 247 CB
303 1672 1735 (breadth of support for large proposals, or to satisfy the user community that their

observing parameters) 1735 SB
gr
gs 2394 2720 0 247 CB
303 1722 1643 (have been optimized, without having a threshold above which proposals get extra initial scrutiny.) 1643 SB
gr
gs 2394 2720 0 247 CB
303 1772 498 (Thus, a new policy is needed.) 498 SB
gr
gs 2394 2720 0 247 CB
303 1872 1744 (It also seems clear that no single-forum review could address all of the above issues well. Our proposal) 1744 SB
gr
gs 2394 2720 0 247 CB
303 1922 1438 (for a new policy has several optional stages \(after the initial review\) to deal with this.) 1438 SB
gr
gs 2394 2720 0 247 CB
303 2022 1696 (The first question in the charge to the Committee also asked us whether, if a new policy is needed, it) 1696 SB
gr
gs 2394 2720 0 247 CB
303 2072 1603 (should be written down and disseminated. It will be important to strike an appropriate balance) 1603 SB
gr
gs 2394 2720 0 247 CB
303 2122 1795 (between \(a\) clarifying the observatory's future intentions about large projects and \(i\) specifying a policy in) 1795 SB
gr
gs 2394 2720 0 247 CB
303 2172 1762 (detail now that proves to be ill-suited to particular cases in future, or which is unnecessarily burdensome) 1762 SB
gr
gs 2394 2720 0 247 CB
303 2222 1728 (either to proposers or reviewers. We therefore seek an approach that has built-in flexibility, but which) 1728 SB
gr
gs 2394 2720 0 247 CB
303 2272 1241 (can and should be written down and disseminated to the user community.) 1241 SB
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303 2480 871 (RECOMMENDATION 1: The Need for a Policy) 871 SB
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3 60 295 2472 B
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3 60 2103 2472 B
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3 52 295 2530 B
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3 52 2103 2530 B
1 F
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303 2580 1637 (The NRAO should have a written, disseminated, policy for the treatment of large proposals. It is) 1637 SB
gr
3 52 295 2580 B
1 F
n
3 52 2103 2580 B
1 F
n
gs 2394 2720 0 247 CB
303 2630 1731 (important, however, that this written policy be flexible enough to cover a wide range of circumstances.) 1731 SB
gr
3 57 295 2630 B
1 F
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3 57 2103 2630 B
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1811 3 295 2684 B
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303 313 1118 (2. A Threshold for an Enhanced "Skeptical Review") 1118 SB
gr
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303 431 1665 ("Normal" proposals are reviewed by small specialized panels of discipline experts from outside the) 1665 SB
gr
gs 2394 2720 0 247 CB
303 481 1688 (NRAO. A favorable review from within the discipline is a necessary, but we believe an insufficient,) 1688 SB
gr
gs 2394 2720 0 247 CB
303 531 1719 (condition for scheduling a "large" proposal. A project large enough to significantly constrain work in) 1719 SB
gr
gs 2394 2720 0 247 CB
303 581 1773 (other areas of astronomy should be asked to impress a review panel that also

includes astronomers whose) 1773 SB
gr
gs 2394 2720 0 247 CB
303 631 1050 (work will not directly benefit from the project's final database.) 1050 SB
gr
gs 2394 2720 0 247 CB
303 731 584 (Such an initial review should ask :) 584 SB
gr
gs 2394 2720 0 247 CB
453 831 1534 (whether a large proposal has high enough scientific priority to warrant the displacement of) 1534 SB
gr
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303 831 19 (\267) q9 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
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453 881 542 (normal work in other areas, and) 542 SB
gr
gs 2394 2720 0 247 CB
453 931 1536 (whether the proposal is well suited to the NRAO telescope \(particularly, that it is not better) 1536 SB
gr
32 0 0 42 42 0 0 0 42 /Symbol font
gs 2394 2720 0 247 CB
303 931 19 (\267) 19 SB
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32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
453 981 626 (suited to some other radio telescope\).) 626 SB
gr
gs 2394 2720 0 247 CB
303 1081 1638 (An important ingredient in community acceptance of large proposals that displace other research) 1638 SB
gr
gs 2394 2720 0 247 CB
303 1131 1754 (significantly is that the duration of the large proposal is well understood, finite, and commensurate with) 1754 SB
gr
gs 2394 2720 0 247 CB
303 1181 1721 (the scientific priority of the project. It is therefore important to establish before a project begins that a) 1721 SB
gr
gs 2394 2720 0 247 CB
303 1231 1605 (specific \(finite\) grant of observing time is involved, and that any extension beyond this must be) 1605 SB
gr
gs 2394 2720 0 247 CB
303 1281 1690 (re-applied for either through the normal proposal process \(if small\) or by further skeptical review \(if) 1690 SB
gr
gs 2394 2720 0 247 CB
303 1331 110 (large\).) 110 SB
gr

gs 2394 2720 0 247 CB
303 1431 1792 (The review panels should also be asked to advise about the appropriateness, and length, of any proprietary) 1792 SB
gr
gs 2394 2720 0 247 CB
303 1481 1596 ("holding time" for the data from large proposals. It is essential that the proposers and the user) 1596 SB
gr
gs 2394 2720 0 247 CB
303 1531 1788 (community clearly understand what has been agreed about the time scale of public release of data before a) 1788 SB
gr
gs 2394 2720 0 247 CB
303 1581 1661 (project is scheduled. Large proposals must therefore address this issue as part of their submission.) 1661 SB
gr
gs 2394 2720 0 247 CB
303 1681 1738 (If the telescope is one on which dynamic scheduling is used, the "skeptical review" panel might also be) 1738 SB
gr
gs 2394 2720 0 247 CB
303 1731 1650 (asked to comment on whether a proposal is appropriate for use as part of that scheduling strategy.) 1650 SB
gr
gs 2394 2720 0 247 CB
303 1831 1781 (The expanded "skeptical review" panels for large proposals should be drawn from people who are already) 1781 SB
gr
gs 2394 2720 0 247 CB
303 1881 1614 (refereeing other discipline areas for that telescope. For the single dishes, it may be necessary to) 1614 SB
gr
gs 2394 2720 0 247 CB
303 1931 1705 (augment the current referee group because there may not be enough current referees for the job. Past) 1705 SB
gr
gs 2394 2720 0 247 CB
303 1981 1188 (referees, and other cross-disciplinary experts, should then be co-opted.) 1188 SB
gr
gs 2394 2720 0 247 CB
303 2081 1759 (The heart of our suggestion is therefore that any proposal exceeding some threshold \(in hours, discussed) 1759 SB
gr
gs 2394 2720 0 247 CB
303 2131 1700 (quantitatively below\) be reviewed first by a "skeptical review" panel drawn from the pool of proposal) 1700 SB
gr
gs 2394 2720 0 247 CB
303 2181 1787 (referees for that telescope, but representing all major astronomical sub-disciplines served by the telescope.) 1787 SB
gr
gs 2394 2720 0 247 CB
303 2231 1715 (This would allow some of the same referees who judge smaller projects to weigh their priority against) 1715 SB
gr

gs 2394 2720 0 247 CB
303 2281 1770 (those of any large projects that might use up all their time. It ensures that large projects will be judged in) 1770 SB
gr
gs 2394 2720 0 247 CB
303 2331 1751 (the specific context of their impact on the other work currently proposed for the telescope, by a group of) 1751 SB
gr
gs 2394 2720 0 247 CB
303 2381 530 (people well positioned to do so.) 530 SB
gr
gs 2394 2720 0 247 CB
303 2481 302 (The questions of :) 302 SB
gr
gs 2394 2720 0 247 CB
453 2581 1593 (how to balance time awarded to large proposals against smaller proposals addressing the same) 1593 SB
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303 2581 19 (\267) 19 SB
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453 2631 206 (science, and) 206 SB
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gs92394 2720 0 247 CB
453 2681 1489 (what guarantees \(of priority over others with similar scientific intent\) should be given to) 1489 SB
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303 2681 19 (\267) 19 SB
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gs 2394 2720 0 247 CB
453 2731 795 (large proposals once they have been scheduled,) 795 SB
gr
gs 2394 2720 0 247 CB
303 2831 1746 (are also best handled by panels whose members referee both large and small proposals. In other words,) 1746 SB
gr
gs 2394 2720 0 247 CB
303 2881 1786 (with the proposed composition of the skeptical review panels, questions of priority among large and small) 1786 SB
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gs 2394 2720 0 247 CB
303 263 1762 (proposals with similar science goals can be handled as they are now within the normal proposal process.) 1762 SB

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gs 2394 2720 0 247 CB
303 363 1679 (We strongly prefer this approach to that of having a separate standing committee of "large proposal) 1679 SB
gr
gs 2394 2720 0 247 CB
303 413 1706 (reviewers" who do not participate in the normal proposal-review process. Such a separate committee) 1706 SB
gr
gs 2394 2720 0 247 CB
303 463 1750 (would be less aware of the overall scientific context with which large proposal\(s\) would compete. Also,) 1750 SB
gr
gs 2394 2720 0 247 CB
303 513 1653 (the act of setting up a separate process for reviewing large proposals could itself generate pressure) 1653 SB
gr
gs 2394 2720 0 247 CB
303 563 1249 (to have some such proposals scheduled. We do not think this is desirable.) 1249 SB
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32 0 0 42 42 0 0 0 39 /Times-Bold /font29 ANSIFont font
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303 821 1028 (RECOMMENDATION 2: Expanded "Skeptical Review") 1028 SB
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3 52 2103 871 B
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303 921 1732 (All proposals that ask for more observing time than a \(telescope-specific\) threshold, and, at the NRAO) 1732 SB
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3 52 295 921 B
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gs 2394 2720 0 247 CB
303 971 1725 (Director's discretion, some proposals requesting less time than this, should initially

be evaluated by an) 1725 SB
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3 52 295 971 B
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303 1021 995 (expanded "skeptical review" panel of five or more referees.) 995 SB
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3 52 295 1021 B
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3 52 2103 1021 B
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3 52 295 1071 B
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3 52 2103 1071 B
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303 1121 1699 (The panel should be drawn from the normal pool of proposal referees for the telescope, augmented if) 1699 SB
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3 52 295 1121 B
1 F
n
3 52 2103 1121 B
1 F
n
gs 2394 2720 0 247 CB
303 1171 1703 (necessary by others who have recently been proposal referees. The panel should be roughly balanced) 1703 SB
gr
3 52 295 1171 B
1 F
n
3 52 2103 1171 B
1 F
n
gs 2394 2720 0 247 CB
303 1221 1620 (between "experts" in the astronomical sub-discipline addressed by the large proposal, and cross-) 1620 SB
gr
3 52 295 1221 B
1 F
n
3 52 2103 1221 B
1 F
n
gs 2394 2720 0 247 CB
303 1271 389 (disciplinary "skeptics".) 389 SB

gr
3 52 295 1271 B
1 F
n
3 52 2103 1271 B
1 F
n
3 52 295 1321 B
1 F
n
3 52 2103 1321 B
1 F
n
gs 2394 2720 0 247 CB
303 1371 416 (The panel should assess:) 416 SB
gr
3 52 295 1371 B
1 F
n
3 52 2103 1371 B
1 F
n
3 52 295 1421 B
1 F
n
3 52 2103 1421 B
1 F
n
gs 2394 2720 0 247 CB
453 1471 1530 (the scientific priority for the proposal in competition with all other astronomy that is being) 1530 SB
gr
32 0 0 42 42 0 0 0 42 /Symbol font
gs 2394 2720 0 247 CB
303 1471 19 (\267) 19 SB
gr
3 52 295 1471 B
1 F
n
3 52 2103 1471 B
1 F
n
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
453 1521 361 (done at the telescope,) 361 SB
gr
3 52 295 1521 B
1 F
n
3 52 2103 1521 B
1 F
n
3 52 295 1571 B
1 F
n

3 52 2103 1571 B
1 F
n
gs 2394 2720 0 247 CB
453 1621 867 (whether she telescope is well suited to the proposal,) 867 SB
gr
32 0 0 42 42 0 0 0 42 /Symbol font
gs 2394 2720 0 247 CB
303 1621 19 (\267) 19 SB
gr
3 52 295 1621 B
1 F
n
3 52 2103 1621 B
1 F
n
3 52 295 1671 B
1 F
n
3 52 2103 1671 B
1 F
n
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
453 1721 1524 (whether the total duration proposed for the project is well-defined and
commensurate with) 1524 SB
gr
32 0 0 42 42 0 0 0 42 /Symbol font
gs 2394 2720 0 247 CB
303 1721 19 (\267) 19 SB
gr
3 52 295 1721 B
1 F
n
3 52 2103 1721 B
1 F
n
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
453 1771 364 (the scientific priority,) 364 SB
gr
3 52 295 1771 B
1 F
n
3 52 2103 1771 B
1 F
n
3 52 295 1821 B
1 F
n
3 52 2103 1821 B
1 F
n
gs 2394 2720 0 247 CB
453 1871 1565 (whether there should be any proprietary "holding time" for the data, and, if so,

for how long,) 1565 SB
gr
32 0 0 42 42 0 0 0 42 /Symbol font
gs 2394 2720 0 247 CB
303 1871 19 (\267) 19 SB
gr
3 52 295 1871 B
1 F
n
3 52 2103 1871 B
1 F
n
3 52 295 1921 B
1 F
n
3 52 2103 1921 B
1 F
n
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
453 1971 1559 (whether the proposal is suitable for use as a backup project in a dynamic scheduling strategy) 1559 SB
gr
32 0 0 42 42 0 0 0 42 /Symbol font
gs 2394 2720 0 247 CB
303 1971 19 (\267) 19 SB
gr
3 52 295 1971 B
1 F
n
3 52 2103 1971 B
1 F
n
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
453 2021 286 (for the telescope.) 286 SB
gr
3 52 295 2021 B
1 F
n
3 52 2103 2021 B
1 F
n
3 52 295 2071 B
1 F
n
3 52 2103 2071 B
1 F
n
3 52 295 2121 B
1 F
n
3 52 2103 2121 B
1 F
n

gs 2394 2720 0 247 CB
303 2171 507 (\(Also see Recommendation 5\)) 507 SB
gr
3 57 295 2171 B
1 F
n
3 57 2103 2171 B
1 F
n
1811 3 295 2225 B
1 F
n
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32 0 0 50 50 0 0 0 46 /Times-Bold /font29 ANSIFont font
0 0 0 fC
gs 2394 2720 0 247 CB
303 263 959 (3. Setting Thresholds for "Skeptical Review") 959 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
303 440 409 (At the VLA and VLBA:) 409 SB
gr
gs 2394 2720 0 247 CB
303 540 1755 (We suggest that the threshold for an expanded initial review should be set in an explicitly "fuzzy" range) 1755 SB
gr
gs 2394 2720 0 247 CB
303 590 1773 (of 200-300 hours of observing time. \(300 hours corresponds to about 2 weeks of schedule time if done in) 1773 SB
gr
gs 2394 2720 0 247 CB
303 640 1781 (one session.\) Since 1990, use of this criterion to trigger additional review would have affected only about) 1781 SB
gr
gs 2394 2720 0 247 CB
303 690 1656 (one project previously treated as "standard" at the VLA, plus the two VLA surveys. It would have) 1656 SB
gr
gs 2394 2720 0 247 CB
303 740 1753 (affected five previously treated as "standard" at the VLBA. \(These statements are based on statistics for) 1753 SB
gr
gs 2394 2720 0 247 CB
303 790 1784 (the VLA and VLBA furnished to us by Barry Clark.\) The number of past proposals that would have been) 1784 SB
gr
gs 2394 2720 0 247 CB
303 840 1726 (exposed to "skeptical review" remains modest wherever the threshold could be set in the few-hundred-) 1726 SB
gr
gs 2394 2720 0 247 CB
303 890 559 (hour range \(for these telescopes\).) 559 SB

gr
gs 2394 2720 0 247 CB
303 1040 444 (At the 12-meter telescope:) 444 SB
gr
gs 2394 2720 0 247 CB
303 1140 1613 (We believe that the main criterion for setting the threshold is "significant displacement of other) 1613 SB
gr
gs 2394 2720 0 247 CB
303 1190 1579 (proposals", so a reasonable criterion is that the threshold should be around 10 times the mean) 1579 SB
gr
gs 2394 2720 0 247 CB
303 1240 1743 (length of scheduled proposals. A threshold around 1000 hours might therefore be more appropriate for) 1743 SB
gr
gs 2394 2720 0 247 CB
303 1290 390 (the 12-meter telescope.) 390 SB
gr
gs 2394 2720 0 247 CB
303 1440 211 (At the GBT:) 211 SB
gr
gs 2394 2720 0 247 CB
303 1540 1592 (In the case of the GBT, we can expect proposal pressure to be a strong function of time as new) 1592 SB
gr
gs 2394 2720 0 247 CB
303 1590 1760 (instrumental capabilities are commissioned. There may however be times early on when instruments are) 1760 SB
gr
gs 2394 2720 0 247 CB
303 1640 1690 (unexpectedly unavailable, and dynamic scheduling is needed. There may be good reasons to seek to) 1690 SB
gr
gs 2394 2720 0 247 CB
303 1690 1583 (combine some classes of large proposal with a dynamic scheduling strategy: e.g., some survey) 1583 SB
gr
gs 2394 2720 0 247 CB
303 1740 1611 (observations at low frequencies might be appropriate as "backup" projects at times when higher) 1611 SB
gr
gs 2394 2720 0 247 CB
303 1790 1760 (frequencies are unavailable due to weather or equipment problems. We suggest that a working group be) 1760 SB
gr
gs 2394 2720 0 247 CB
303 1840 1779 (established to examine such issues for large proposals at the GBT, both with regard to setting appropriate) 1779 SB
gr
gs 2394 2720 0 247 CB
303 1890 1669 (upper limits to the time allocation for large proposals, and with regard to their role in any dynamic) 1669 SB
gr
gs 2394 2720 0 247 CB

303 1940 623 (scheduling strategy for the telescope.) 623 SB
gr
gs 2394 2720 0 247 CB
303 2090 1683 (Our main reason for suggesting a "fuzzy" threshold for the initial "skeptical review", i.e. an explicit) 1683 SB
gr
gs 2394 2720 0 247 CB
303 2140 1655 (statement that discretion will be exercised by the NRAO in applying the criterion, is to discourage) 1655 SB
gr
gs 2394 2720 0 247 CB
303 2190 1441 (attempts to avoid the process by tailoring proposals to be just under a strict threshold.) 1441 SB
gr
32 0 0 42 42 0 0 0 39 /Times-Bold /font29 ANSIFont font
gs 2394 2720 0 247 CB
303 2398 682 (RECOMMENDATION 3: Thresholds) 682 SB
gr
0 0 0 fC
/fm 256 def
1811 3 295 2390 B
1 F
n
3 60 295 2390 B
1 F
n
3 60 2103 2390 B
1 F
n
3 52 295 2448 B
1 F
n
3 52 2103 2448 B
1 F
n
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
303 2498 1794 (For the VLA and VLBA, the threshold for skeptical review should be around 300 hours of observing time.) 1794 SB
gr
3 52 295 2498 B
1 F
n
3 52 2103 2498 B
1 F
n
gs 2394 2720 0 247 CB
303 2548 1740 (For the 12-meter telescope, it should be around 1000 hours. For the GBT, the threshold should change) 1740 SB
gr
3 52 295 2548 B
1 F
n
3 52 2103 2548 B
1 F

n
gs 2394 2720 0 247 CB
303 2598 1768 (as new instruments and higher-frequency capabilities are commissioned, and will need continual review.) 1768 SB
gr
3 52 295 2598 B
1 F
n
3 52 2103 2598 B
1 F
n
gs 2394 2720 0 247 CB
303 2648 1699 (In all cases, these thresholds should be explicitly "fuzzy", i.e. the policy should make it clear that the) 1699 SB
gr
3 52 295 2648 B
1 F
n
3 52 2103 2648 B
1 F
n
gs 2394 2720 0 247 CB
303 2698 1717 (NRAO Director has the option to send some proposals below these thresholds for expanded "skeptical) 1717 SB
gr
3 52 295 2698 B
1 F
n
3 52 2103 2698 B
1 F
n
gs 2394 2720 0 247 CB
303 2748 140 (review".) 140 SB
gr
3 57 295 2748 B
1 F
n
3 57 2103 2748 B
1 F
n
1811 3 295 2802 B
1 F
n
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0 0 0 fC
gs 2394 2720 0 247 CB
303 263 1401 (4. Should Proposers be able to "Volunteer" for Skeptical Review?) 1401 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
303 431 1696 (Some 200-300 hour projects have already been done at the VLA and VLBA via

series of consecutive) 1696 SB
gr
gs 2394 2720 0 247 CB
303 481 1739 (proposals for 100 or so hours. This approach provides a way to do moderate-sized projects through the) 1739 SB
gr
gs 2394 2720 0 247 CB
303 531 1783 (normal channels. We see no reason to discourage it. It amounts to an ongoing, but not guaranteed, grant) 1783 SB
gr
gs 2394 2720 0 247 CB
303 581 1675 (of observing time on the basis of demonstrable progress, with the review time scale being set by the) 1675 SB
gr
gs 2394 2720 0 247 CB
303 631 893 (proposers' success with, and capacity for, the project.) 893 SB
gr
gs 2394 2720 0 247 CB
303 731 1681 (This approach may not be well-suited to all moderate-sized projects, however. Data subsets or pilot) 1681 SB
gr
gs 2394 2720 0 247 CB
303 781 1621 (projects do not always produce good science. Doing a moderate-sized project piecemeal so as to) 1621 SB
gr
gs 2394 2720 0 247 CB
303 831 1696 (maximize short-term "excitement" at proposal deadlines may distort its overall strategy. Some VLA) 1696 SB
gr
gs 2394 2720 0 247 CB
303 881 1786 (observations of source samples that interest a wide community have been fragmented into small proposals) 1786 SB
gr
gs 2394 2720 0 247 CB
303 931 1699 (carried out by different groups. The resulting loss of homogeneity limits the long-term benefit to the) 1699 SB
gr
gs 2394 2720 0 247 CB
303 981 1771 (community, which would be better served by the data produced by a small number of moderate-sized and) 1771 SB
gr
gs 2394 2720 0 247 CB
303 1031 1767 (well-coordinated proposals rather than a large number of small, independent ones. \(VLA observations of) 1767 SB
gr
gs 2394 2720 0 247 CB
303 1081 1723 (the 3CR continuum sources, and of galactic water vapor masers are particular examples of this known) 1723 SB
gr
gs 2394 2720 0 247 CB
303 1131 105 (to us.\)) 105 SB
gr
gs 2394 2720 0 247 CB
303 1231 1749 (The "volunteer" mechanism may also be appropriate for proposals that require coordinated observing at) 1749 SB

gr
gs 2394 2720 0 247 CB
303 1281 1787 (several telescopes. A "skeptical review" committee might be better able to evaluate the whole plan, rather) 1787 SB
gr
gs 2394 2720 0 247 CB
303 1331 1769 (than leaving each part for independent \(un-coordinated\) review through different channels in the normal) 1769 SB
gr
gs 2394 2720 0 247 CB
303 1381 290 (proposal process.) 290 SB
gr
gs 2394 2720 0 247 CB
303 1481 1768 (We therefore see some merit in inviting proposers to volunteer projects of moderate size \(100-300 hours\)) 1768 SB
gr
gs 2394 2720 0 247 CB
303 1531 1729 (for the enhanced "skeptical review". This might be a way for a proposer to ensure that moderate-sized) 1729 SB
gr
gs 2394 2720 0 247 CB
303 1581 1737 (proposals obtain all the time that they need \(regardless of graduate student involvement or the status of) 1737 SB
gr
gs 2394 2720 0 247 CB
303 1631 1737 (intermediate results\). It might also encourage attempts to produce more homogeneous, moderate-sized) 1737 SB
gr
gs 2394 2720 0 247 CB
303 1681 1791 (databases that would benefit a wider community. Success in such proposals would also allow proposers to) 1791 SB
gr
gs 2394 2720 0 247 CB
303 1731 1758 (marshal resources \(staff, computer resources, funding, etc.\) better for moderate-sized projects, simply by) 1758 SB
gr
gs 2394 2720 0 247 CB
303 1781 1677 (clarifying that all of the requested observing time would be granted \(the current "will be considered) 1677 SB
gr
gs 2394 2720 0 247 CB
303 1831 1750 (further" status at the VLA leaves some uncertainties hanging over proposals in the present queue.\) The) 1750 SB
gr
gs 2394 2720 0 247 CB
303 1881 1707 (fact that a proposal had successfully passed a more demanding skeptical review process at the NRAO) 1707 SB
gr
gs 2394 2720 0 247 CB
303 1931 846 (could make it more attractive to funding agencies.) 846 SB
gr
gs 2394 2720 0 247 CB
303 2031 1795 (PI's will therefore have some incentives to "volunteer" for extra review, and it seems advantageous to offer) 1795 SB
gr

gs 2394 2720 0 247 CB
303 2081 1766 (this possibility as an option. We should however aim for a situation wherein only a small minority of all) 1766 SB
gr
gs 2394 2720 0 247 CB
303 2131 1695 (proposals goes for "skeptical review". This goal could be reached by holding proposals that undergo) 1695 SB
gr
gs 2394 2720 0 247 CB
303 2181 1740 (skeptical review to a significantly higher standard, in recognition of the greater long-term commitment) 1740 SB
gr
gs 2394 2720 0 247 CB
303 2231 1791 (that would be made to successful ones. \(This has happened with the "key projects" category at the KPNO,) 1791 SB
gr
gs 2394 2720 0 247 CB
303 2281 541 (where the success rate is small.\)) 541 SB
gr
32 0 0 42 42 0 0 0 39 /Times-Bold /font29 ANSIFont font
gs 2394 2720 0 247 CB
303 2539 1100 (RECOMMENDATION 4: Volunteering for Skeptical Review) 1100 SB
gr
0 0 0 fC
/fm 256 def
1811 3 295 2531 B
1 F
n
3 60 295 2531 B
1 F
n
3 60 2103 2531 B
1 F
n
3 52 295 2589 B
1 F
n
3 52 2103 2589 B
1 F
n
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
303 2639 1698 (Proposers of "moderate-sized" \(below-threshold\) projects may also volunteer for expanded "skeptical) 1698 SB
gr
3 52 295 2639 B
1 F
n
3 52 2103 2639 B
1 F
n
gs 2394 2720 0 247 CB
303 2689 1743 (review" of their proposals. This option provides a way to obtain a stronger guarantee of observing time) 1743 SB
gr

3 52 295 2689 B
1 F
n
3 52 2103 2689 B
1 F
n
gs 2394 2720 0 247 CB
303 2739 1704 (for moderate-sized projects whose science could clearly be advanced by receiving such guarantees, in) 1704 SB
gr
3 52 295 2739 B
1 F
n
3 52 2103 2739 B
1 F
n
gs 2394 2720 0 247 CB
303 2789 1702 (return for submitting them to a more demanding initial review. We emphasize that we see this as an) 1702 SB
gr
3 52 295 2789 B
1 F
n
3 52 2103 2789 B
1 F
n
gs 2394 2720 0 247 CB
303 2839 1740 (option to be used rarely, and only in exceptional cases where the science would suffer if the project was) 1740 SB
gr
3 52 295 2839 B
1 F
n
3 52 2103 2839 B
1 F
n
gs 2394 2720 0 247 CB
303 2889 901 (done piecemeal through the regular proposal process.) 901 SB
gr
3 57 295 2889 B
1 F
n
3 57 2103 2889 B
1 F
n
1811 3 295 2943 B
1 F
n
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gs 2394 2720 0 247 CB

303 263 1264 (5. "Expert Review" - Ongoing Monitoring and Supervision) 1264 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
303 381 1762 (Some, but not necessarily all, large projects, may need further review by more a narrowly-focused expert) 1762 SB
gr
gs 2394 2720 0 247 CB
303 431 541 (panel before they are scheduled.) 541 SB
gr
gs 2394 2720 0 247 CB
303 531 1770 (The impact of large proposals on other NRAO users requires us to ensure that their observing techniques) 1770 SB
gr
gs 2394 2720 0 247 CB
303 581 1566 (and time allocations are optimized both to the science and to the telescope involved, and that) 1566 SB
gr
gs 2394 2720 0 247 CB
303 631 1381 (the final databases are made available promptly and in scientifically robust forms.) 1381 SB
gr
gs 2394 2720 0 247 CB
303 731 1684 (The main areas in which further expert review may be appropriate before a project is scheduled are:) 1684 SB
gr
gs 2394 2720 0 247 CB
303 831 1752 (a\) "Up front" scientific issues: sample definition and selection, sensitivity limits, extent of sky coverage.) 1752 SB
gr
gs 2394 2720 0 247 CB
303 881 1573 (These are areas where it is appropriate to show that some consensus has been achieved , or at) 1573 SB
gr
gs 2394 2720 0 247 CB
303 931 1764 (least that advice has been obtained, from across the astronomical sub-discipline most concerned with the) 1764 SB
gr
gs 2394 2720 0 247 CB
303 981 155 (proposal.) 155 SB
gr
gs 2394 2720 0 247 CB
303 1081 1647 (b\) "Up front" technical issues: optimal data acquisition strategies, organization of observing time,) 1647 SB
gr
gs 2394 2720 0 247 CB
303 1131 1684 (instrumental limitations or other on-line issues which may have a strong engineering or operational) 1684 SB
gr
gs 2394 2720 0 247 CB
303 1181 1722 (component. In some cases, it may be important to require a pilot or demonstration project to prove an) 1722 SB
gr
gs 2394 2720 0 247 CB
303 1231 1763 (observational technique before going ahead with the project as initially proposed.

This area may require) 1763 SB
gr
gs 2394 2720 0 247 CB
303 1281 1630 (review by a group that involves scientists, engineers familiar with the instruments, and telescope) 1630 SB
gr
gs 2394 2720 0 247 CB
303 1331 270 (operations staff.) 270 SB
gr
gs 2394 2720 0 247 CB
303 1431 1499 (Ongoing review of a project after it has been started may also be appropriate, to monitor:) 1499 SB
gr
gs 2394 2720 0 247 CB
303 1531 1705 (a\) Data-processing progress: ongoing review may be particularly appropriate for projects whose data) 1705 SB
gr
gs 2394 2720 0 247 CB
303 1581 1688 (volume presents a major computing challenge. If such review is required, the supervision should be) 1688 SB
gr
gs 2394 2720 0 247 CB
303 1631 1595 ("strong". By this we mean that the review panel must be able to recommend withholding later) 1595 SB
gr
gs 2394 2720 0 247 CB
303 1681 1741 (installments of observing time if the project does not meet data-processing targets \(quality and speed of) 1741 SB
gr
gs 2394 2720 0 247 CB
303 1731 1787 (the data analysis\) in a timely way. Such a panel will in effect re-referee the project while it is in progress,) 1787 SB
gr
gs 2394 2720 0 247 CB
303 1781 1682 (and could recommend no further time allocation if agreed data-processing milestones were not met.) 1682 SB
gr
gs 2394 2720 0 247 CB
303 1881 1795 (b\) Construction of an accessible public repository for data products. If a big community's observing time is) 1795 SB
gr
gs 2394 2720 0 247 CB
303 1931 1737 ("taxed" to make room for large projects, then that cosmunity should expect to share the benefits of the) 1737 SB
gr
gs 2394 2720 0 247 CB
303 1981 1765 (final database quickly. This implies a review process aimed at ensuring prompt access to calibrated data) 1765 SB
gr
gs 2394 2720 0 247 CB
303 2031 1726 (whose quality are uniform and well-understood. It also requires that large proposals clearly state their) 1726 SB
gr
gs 2394 2720 0 247 CB
303 2081 1732 (plans for public access to the data \(and the nature of the proposed data

products\) in order to be sent for) 1732 SB
gr
gs 2394 2720 0 247 CB
303 2131 1795 (skeptical review. If ongoing "expert" review of the data products is required, it would typically be done by) 1795 SB
gr
gs 2394 2720 0 247 CB
303 2181 938 (a panel with a mix of scientific and computer expertise.) 938 SB
gr
gs 2394 2720 0 247 CB
303 2281 1722 (To the extent that any of these issues apply to a particular large proposal, they imply review by groups) 1722 SB
gr
gs 2394 2720 0 247 CB
303 2331 1713 (different in composition from the initial "skeptical review" panel. Unlike this panel, which should be) 1713 SB
gr
gs 2394 2720 0 247 CB
303 2381 1762 (cross-disciplinary and is probably best drawn from the existing \(external to NRAO\) referee pool, "expert) 1762 SB
gr
gs 2394 2720 0 247 CB
303 2431 1742 (review" panels would benefit by including people who are not currently acting as NRAO referees. They) 1742 SB
gr
gs 2394 2720 0 247 CB
303 2481 1794 (could include NRAO scientific and technical staff with special knowledge about the telescope, the science,) 1794 SB
gr
gs 2394 2720 0 247 CB
303 2531 1777 (or data processing relevant to the proposal. Some would need to be ongoing. These might use a range of) 1777 SB
gr
gs 2394 2720 0 247 CB
303 2581 1745 (formats, including telephone conferences, face-to-face meetings or workshops, that are not traditionally) 1745 SB
gr
gs 2394 2720 0 247 CB
303 2631 715 (used for proposal refereeing at the NRAO.) 715 SB
gr
gs 2394 2720 0 247 CB
303 2731 1700 (We emphasize that not all "large" projects should need exposure to all of the above forms of ongoing) 1700 SB
gr
gs 2394 2720 0 247 CB
303 2781 1739 (monitoring and supervision. It is likely that all projects above some very large \(1000-hour ?\) threshold) 1739 SB
gr
gs 2394 2720 0 247 CB
303 2831 1787 (should have some ongoing supervision by an ad hoc "expert panel". But length of observing time alone is) 1787 SB
gr
gs 2394 2720 0 247 CB
303 2881 1788 (not the only criterion for whether ongoing expert review is necessary. The technical "degree of difficulty") 1788 SB

gr
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gs 2394 2720 0 247 CB
303 263 1781 (of the project is clearly significant. For example, proposals that are straightforward in terms of observing) 1781 SB
gr
gs 2394 2720 0 247 CB
303 313 1736 (technique and data analysis, but which require 'simply' large amounts of time, might be selected on the) 1736 SB
gr
gs 2394 2720 0 247 CB
303 363 1720 (basis of a favorable evaluation of the skeptical review committee. But a proposal which challenges the) 1720 SB
gr
gs 2394 2720 0 247 CB
303 413 1748 (current technical frontier \(Zeeman work on the GBT, a dramatic new pulsar search strategy\) and which) 1748 SB
gr
gs 2394 2720 0 247 CB
303 463 1620 (requires an extensive block of time should surely be reviewed by a group with a strong technical) 1620 SB
gr
gs 2394 2720 0 247 CB
303 513 606 (background before being scheduled.) 606 SB
gr
gs 2394 2720 0 247 CB
303 613 1692 (It is important that contentious areas, e.g. "research" issues about data processing, etc. should not be) 1692 SB
gr
gs 2394 2720 0 247 CB
303 663 1693 (allowed to stymie progress on a proposal. Issues such as timely completion and accessible archiving) 1693 SB
gr
gs 2394 2720 0 247 CB
303 713 1085 (of the data will be important for many large proposals, however.) 1085 SB
gr
gs 2394 2720 0 247 CB
303 813 1774 (The heart of the issue here is that the style and extent of any ongoing supervision of large projects should) 1774 SB
gr
gs 2394 2720 0 247 CB
303 863 1676 (be determined on a case-by-case basis. Any policy that is written down now should simply define a) 1676 SB
gr
gs 2394 2720 0 247 CB
303 913 1773 (process that is flexible enough to make this case-by-case determination. It should not try to anticipate all) 1773 SB
gr
gs 2394 2720 0 247 CB
303 963 1454 (of the possible supervisory issues in advance \(though we have pointed to a few

above\).) 1454 SB
gr
gs 2394 2720 0 247 CB
303 1063 1795 (We therefore suggest that when a "skeptical review" panel for a proposal assigns it high scientific priority,) 1795 SB
gr
gs 2394 2720 0 247 CB
303 1113 1766 (they should also recommend whether the proposal should be subject to further expert review, and if so in) 1766 SB
gr
gs 2394 2720 0 247 CB
303 1163 1750 (what areas. The scope and style of any further review process should however be decided by the NRAO) 1750 SB
gr
gs 2394 2720 0 247 CB
303 1213 1783 (Director. with advice from any other appropriate sources. It is important that the process begin with input) 1783 SB
gr
gs 2394 2720 0 247 CB
303 1263 1683 (from representatives of the whole astronomical community served by the telescope involved, but the) 1683 SB
gr
gs 2394 2720 0 247 CB
303 1313 1760 ("skeptical review" panel should neither be expected to, or expect to, specify the entire subsequent review) 1760 SB
gr
gs 2394 2720 0 247 CB
303 1363 135 (process.) 135 SB
gr
gs 2394 2720 0 247 CB
303 1463 1731 (\(We note parenthetically that in discussing this area, we were guided by the recent experience with the) 1731 SB
gr
gs 2394 2720 0 247 CB
303 1513 1728 (two VLA surveys. We understand that there were significant technical issues that had to be settled for) 1728 SB
gr
gs 2394 2720 0 247 CB
303 1563 1759 (each of the surveys, primarily in the area of data analysis. We also believe that the community relied on) 1759 SB
gr
gs 2394 2720 0 247 CB
303 1613 1733 (the survey oversight committee\(s\) to ensure that the data were made readily available to the public in a) 1733 SB
gr
gs 2394 2720 0 247 CB
303 1663 1726 (timely manner. Perhaps this would have occurred anyway, but we believe that it was helpful to have a) 1726 SB
gr
gs 2394 2720 0 247 CB
303 1713 969 (mechanism in place to strengthen the resolve of the PI's!\)) 969 SB
gr
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303 1971 957 (RECOMMENDATION 5: Ongoing "Expert" Review) 957 SB

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1 F
n
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1 F
n
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1 F
n
3 52 2103 2021 B
1 F
n
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
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303 2071 1670 (The skeptical review panel for a large proposal should also advise the NRAO Director whether any) 1670 SB
gr
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3 52 2103 2071 B
1 F
n
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303 2121 1151 (further "expert" review of the proposal is needed in four main areas:) 1151 SB
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n
3 52 2103 2121 B
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n
3 52 295 2171 B
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453 2221 636 (scientific issues of observing strategy,) 636 SB
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gr
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303 2271 19 (\267) 19 SB
gr
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453 2321 679 (ongoing review of project progress, and,) 679 SB
gr
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303 2321 19 (\267) 19 SB
gr
3 52 295 2321 B
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453 2371 658 (public availability of the data products.) 658 SB
gr
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303 2371 19 (\267) 19 SB
gr
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3 52 295 2421 B
1 F
n
3 52 2103 2421 B
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303 2471 1771 (Not all large proposals will require further review in all of these areas, and many may not require further) 1771 SB
gr

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n
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303 2521 1714 (review at all. If a highly-rated large proposal is of sufficient scope or technical complexity to warrant) 1714 SB
gr
3 52 295 2521 B
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n
3 52 2103 2521 B
1 F
n
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303 2571 1725 (ongoing review, the NRAO should make every effort to achieve this without over-burdening either the) 1725 SB
gr
3 52 295 2571 B
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n
3 52 2103 2571 B
1 F
n
gs 2394 2720 0 247 CB
303 2621 1791 (proposers or the expert referees. The arrangements for any ongoing "expert review" would be made at the) 1791 SB
gr
3 52 295 2621 B
1 F
n
3 52 2103 2621 B
1 F
n
gs 2394 2720 0 247 CB
303 2671 960 (discretion of the NRAO Director on a case-by-case basis.) 960 SB
gr
3 57 295 2671 B
1 F
n
3 57 2103 2671 B
1 F
n
1811 3 295 2725 B
1 F
n
gs 2394 2720 0 247 CB
303 2729 11 (.) 11 SB
gr
EJ RS
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SS
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303 263 1766 (6. Should an Over-all Upper Limit be set to the Time Available for Large Projects?) 1766 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
303 381 1675 (There must be some upper limit, or we could have a situation where all the time goes to a few large) 1675 SB
gr
gs 2394 2720 0 247 CB
303 431 1537 (projects -- an inappropriate asymptote for a national facility with a large, diverse user base.) 1537 SB
gr
gs 2394 2720 0 247 CB
303 531 1742 (The limits should be expected to vary from telescope to telescope, and with time at any given telescope,) 1742 SB
gr
gs 2394 2720 0 247 CB
303 581 1770 (just as the overall proposal pressures vary in response to major changes in instrumentation, to discipline-) 1770 SB
gr
gs 2394 2720 0 247 CB
303 631 1675 (wide shifts in astronomical emphasis, or to astronomical transients such as supernovae and comets.) 1675 SB
gr
gs 2394 2720 0 247 CB
303 731 1771 (In general, we feel that while the over-subscription rate on a telescope remains under 2:1, the question of) 1771 SB
gr
gs 2394 2720 0 247 CB
303 781 1729 (exactly how upper limits are set for large proposals may not be too pressing. But if a large proposal or) 1729 SB
gr
gs 2394 2720 0 247 CB
303 831 1761 (proposals raise the over-subscription rate much over 2:1, their effects would likely be noticeable across a) 1761 SB
gr
gs 2394 2720 0 247 CB
303 881 1221 (broad community, and the upper-limit question would be more pressing.) 1221 SB
gr
gs 2394 2720 0 247 CB
303 981 1682 (For the more heavily over-subscribed facilities such as the VLA, VLBA, and GBT \(presumably\) the) 1682 SB
gr
gs 2394 2720 0 247 CB
303 1031 1762 (appropriate upper limits would be below those appropriate for instruments such as the former 300-ft, the) 1762 SB
gr
gs 2394 2720 0 247 CB
303 1081 1680 (140-ft and the Green Bank interferometer in the years before their shutdown. In the later years of a) 1680 SB
gr
gs 2394 2720 0 247 CB

303 1131 1736 (telescope's operation, doing large-scale surveys becomes attractive for operational, as well as scientific,) 1736 SB
gr
gs 2394 2720 0 247 CB
303 1181 1781 (reasons. \(Simplifying telescope schedules and minimizing equipment changes are often good operational) 1781 SB
gr
gs 2394 2720 0 247 CB
303 1231 473 (strategies as a facility ages\).) 473 SB
gr
gs 2394 2720 0 247 CB
303 1331 1775 (Within this committee, our thresholds for discomfort about large proposals displacing smaller ones on an) 1775 SB
gr
gs 2394 2720 0 247 CB
303 1381 1717 (instrument in the prime of its scientific life ranged from 1/6 to 1/3 of the total observing time. \(Large) 1717 SB
gr
gs 2394 2720 0 247 CB
303 1431 1716 (projects that require time in the most "popular" LST ranges for galactic and extragalactic work would) 1716sSB
gr
gs 2394 2720 0 247 CB
303 1481 1472 (obviously constrain other work more severely than those with intrinsic LST flexibility.\)) 1472 SB
gr
gs 2394 2720 0 247 CB
303 1581 1744 (We concluded however that it is probably inappropriate for us to go beyond this to assess general large-) 1744 SB
gr
gs 2394 2720 0 247 CB
303 1631 1747 (proposal upper limits for any particular telescope as part of this report. Instead, we wish to recommend) 1747 SB
gr
gs 2394 2720 0 247 CB
303 1681 1345 (how such an assessment should be obtained for any telescope when it is needed.) 1345 SB
gr
gs 2394 2720 0 247 CB
303 1781 1725 (In our opinion, the best group to assess this issue would be a cross-disciplinary panel of scientists with) 1725 SB
gr
gs 2394 2720 0 247 CB
303 1831 1702 (access to the statistics of observing time requests from, and an appraisal of the scientific vigor in, the) 1702 SB
gr
gs 2394 2720 0 247 CB
303 1881 1738 (different sub-disciplines that dominate the proposal demand at the telescope. This description matches) 1738 SB
gr
gs 2394 2720 0 247 CB
303 1931 1330 (that of the "cross-disciplinary" parts of our proposed "skeptical review" panels.) 1330 SB
gr
gs 2394 2720 0 247 CB

303 2031 1758 (We also believe that advice on upper limits to the observing time for large proposals will be needed only) 1758 SB
gr
gs 2394 2720 0 247 CB
303 2081 1720 (on the \(presumably rare\) occasions when more than one large proposal at a time is highly rated by the) 1720 SB
gr
gs 2394 2720 0 247 CB
303 2131 1747 (skeptical review panels for a given telescope. We therefore suggest that, on these occasions, the NRAO) 1747 SB
gr
gs 2394 2720 0 247 CB
303 2181 1569 (Director seek such advice from the cross-disciplinary cohort of those skeptical review panels.) 1569 SB
gr
gs 2394 2720 0 247 CB
303 2281 1781 (It is important that any upper limits that are established at such times not be re-interpreted later as quotas) 1781 SB
gr
gs 2394 2720 0 247 CB
303 2331 1742 (of time that "should" be filled by large proposals. High scientific priority based on reviewing proposals) 1742 SB
gr
gs 2394 2720 0 247 CB
303 2381 1742 (that were initiated on the "open market" by users should be the only driver for assigning time to a large) 1742 SB
gr
gs 2394 2720 0 247 CB
303 2431 775 (proposal in competition with smaller projects.) 775 SB
gr
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303 2589 1412 (RECOMMENDATION 6: Upper Limits to the Total Time for Large Proposals) 1412 SB
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342 2689 129 (several) 130 SB
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569 2689 171 (proposals) 172 SB
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801 2689 30 (a) 31 SB
832 2689 104 (given) 105 SB
937 2689 164 (telescope) 165 SB
1102 2689 63 (are) 64 SB
1166 2689 119 (highly) 120 SB
1286 2689 96 (rated) 97 SB
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1434 2689 63 (the) 64 SB
1498 2689 160 (skeptical) 162 SB
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303 2739 1650 (Director should seek advice from a cross-disciplinary subset of the regular proposal referees about) 1650 SB
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303 2789 107 (upper) 110 SB
413 2789 108 (limits) 111 SB
524 2789 43 (to) 46 SB
570 2789 63 (the) 66 SB
636 2789 142 (fraction) 145 SB
781 2789 44 (of) 48 SB
829 2789 54 (all) 58 SB
887 2789 175 (observing) 179 SB
1066 2789 86 (time) 90 SB
1156 2789 76 (that) 80 SB
1236 2789 123 (should) 127 SB
1363 2789 49 (be) 53 SB
1416 2789 141 (devoted) 145 SB
1561 2789 43 (to) 47 SB
1608 2789 107 (them.) 111 SB
1719 2789 11 ( ) 15 SB
1734 2789 82 (Any) 86 SB
1820 2789 113 (policy) 117 SB
1937 2789 162 (statement) 162 SB
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613 2839 108 (limits) 112 SB
725 2839 93 (must) 97 SB
822 2839 189 (emphasize) 193 SB
1015 2839 82 (they) 87 SB
1102 2839 76 (will) 81 SB
1183 2839 65 (not) 70 SB
1253 2839 49 (be) 54 SB
1307 2839 195 (interpreted) 200 SB
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1558 2839 154 ("quotas") 159 SB
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1765 2839 49 (be) 54 SB
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2014 2839 85 (large) 85 SB
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3 57 2103 2889 B
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303 263 732 (7. Announcements of Opportunity) 732 SB
gr
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303 372 1717 (The committee considered whether the NRAO should explicitly solicit proposals for large projects via) 1717 SB
gr
gs 2394 2720 0 247 CB
303 422 1757 (Announcements of Opportunity, either targeted to specific disciplines or to special deadlines \(other than) 1757 SB
gr
gs 2394 2720 0 247 CB
303 472 642 (those of the regular proposal process.\)) 642 SB
gr
gs 2394 2720 0 247 CB
303 572 1033 (It was our unanimous opinion that this would be undesirable.) 1033 SB
gr
gs 2394 2720 0 247 CB
303 672 1768 (It would separate "opportunities" for proposing large projects from the regular proposal process, whereas) 1768 SB
gr
gs 2394 2720 0 247 CB
303 722 1731 (we see merit in keeping the processes for large and small proposals well-coupled. It is also hard to see) 1731 SB
gr
gs 2394 2720 0 247 CB
303 772 1662 (what benefit would come by encouraging the whole user community to think about large proposals) 1662 SB
gr
gs 2394 2720 0 247 CB
303 822 264 (simultaneously.) 264 SB
gr
gs 2394 2720 0 247 CB
303 922 1713 (The NRAO-operated telescopes are ground-based and flexible in their capabilities, so operational and) 1713 SB
gr
gs 2394 2720 0 247 CB
303 972 1794 (planning considerations differ greatly from those needed to establish the scientific program of space-borne) 1794 SB
gr
gs 2394 2720 0 247 CB
303 1022 1690 (instruments, for example. The AO approach would however place some obligation on the NRAO to) 1690 SB
gr
gs 2394 2720 0 247 CB
303 1072 1791 (schedule some large projects after a period in which it had encouraged the whole user community to make) 1791 SB
gr
gs 2394 2720 0 247 CB
303 1122 326 (proposals for them.) 326 SB
gr
gs 2394 2720 0 247 CB
303 1222 1759 (It is particularly undesirable to create an artificial imbalance between the pressures for large and regular) 1759 SB
gr
gs 2394 2720 0 247 CB
303 1272 1793 (proposals when our ultimate goal is to find an appropriate balance. We believe that balance is more likely) 1793 SB
gr

gs 2394 2720 0 247 CB
303 1322 1722 (to be achieved through a proposal process that is driven mainly by the scientific interests of individual) 1722 SB
gr
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303 1372 999 (investigators, than through one driven by ad hoc deadlines.) 999 SB
gr
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303 1580 1048 (RECOMMENDATION 7: Announcements of Opportunity) 1048 SB
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3 52 2103 1630 B
1 F
n
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303 1680 1792 (The NRAO should not make Announcements of Opportunity for the submission of large proposals. Large) 1792 SB
gr
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n
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1 F
n
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303 1730 1658 (proposals should be submitted at the normal proposal deadlines, without special solicitation by the) 1658 SB
gr
3 52 295 1730 B
1 F
n
3 52 2103 1730 B
1 F
n
gs 2394 2720 0 247 CB
303 1780 205 (observatory.) 205 SB
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From: dbacker@bkypsr2.berkeley.edu (don backer 415 campbell 510-642-5128)
To: abridle@NRAO.EDU
Subject: reply
Date: Wed, 22 Jan 1997 15:12:01 -0800

Alan,

I have your messages and will read by tomorrow. Just started
two classes today and am still busy with that.

Don

From VM Thu Jan 23 17:02:27 1997
X-VM-v5-Data: ([nil nil nil nil nil nil nil nil nil]
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From: "David Hogg" <dhogg@NRAO.EDU>
To: abridle@NRAO.EDU (Alan Bridle)
Cc: dhogg@polaris.cv.nrao.edu (David Hogg)
Subject: Re: NRAO Large Proposals Committee
Date: Thu, 23 Jan 1997 14:58:42 -0500 (EST)

Alan --
I have read the copy of the report which you gave me, and I
think it is excellent. I have no changes to suggest.

I am happy to add the bullet which Paul discussed with you.
I am happy to assume that Don Backer's concerns are covered
implicitly in the report, and need no specific additional words.

I think the report came together very well, and I expect that
Paul will find it very useful. I believe this is because of all
of the work which you personally invested in it. The members
were surely of some help, in contributing ideas and discussion,
but you did all of the heavy lifting.

Dave
From VM Fri Jan 24 13:01:41 1997
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From: abridle (Alan Bridle)
To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu
Subject: NRAO Large Proposals Committee
Date: Fri, 24 Jan 1997 11:04:04 -0500

Don Backer and I talked yesterday about his comments on the Jan.6th draft. Don's remaining concern is about the case of the long-term monitoring program which crosses the threshold for "skeptical review" by virtue of its length rather than its width (i.e. not a large time assignment per month or per year, but a modest assignment stretching over many years). Don would basically like to see something in our discussion text (not the recommendations) pointing out that such projects can be addressed either by re-submitting "progress report" proposals every few years through the normal process, or by trying to assure the long-term time allocation "up front" as designated "large proposals". He had some concern that the latter approach was a way to "lock up" observations of an object or group of objects for one group and would prefer that we encourage the "re-proposal" approach for such "long, thin" large proposals.

I think it is fair to characterize our present text as oriented towards the "short, fat" large proposals that have a big impact on scheduling of other work for a relatively short time. An extra paragraph addressing the specific case of long-term monitoring programs (but not materially changing the recommendations) might give Paul and the AD's some help in implementing a new policy, as well as spelling out some of the choices more clearly for users who might make long-term proposals in the future.

I plan to draft such a paragraph based on the discussion I've already had with Don, and will fly it past you later today. This is to enquire whether anyone else on the committee has strong views about how we should treat proposals that are large by virtue of their length rather than by their displacement of other work on a per-annum basis.

Alan B.

From: abridle (Alan Bridle)
To: dhogg
Subject: What about this?
Date: Fri, 24 Jan 1997 14:55:29 -0500

As final para. of section 2:

Before discussing how to set the threshold for the "skeptical review" process at each telescope, we note that the focus of this report is the "large" proposal that is relatively short in duration but wide in its scheduling impact. A time-based threshold for skeptical review could also be exceeded by long-term monitoring projects (variability, pulsar timing, astrometry) that are long in duration but narrow in scheduling impact per observing period. Should such proposals also be subject to "skeptical review"? We believe so, if and only if it is crucial to their scientific goals that the full duration of the program be guaranteed "up front" (to the extent that the NRAO's contract makes sense of guarantees beyond 5 years). Absent a clear scientific reason for such a guarantee, we believe that long-term monitoring programs may be better handled through the normal proposal process, via progress reports and follow-up proposals every few years.

From: "David Hogg" <dhogg@polaris.cv.nrao.edu>
To: abridle@polaris.cv.nrao.edu (Alan Bridle)
Cc: dhogg@polaris.cv.nrao.edu (David Hogg)
Subject: Re: What about this?
Date: Fri, 24 Jan 1997 15:21:32 -0500 (EST)

Hi Alan,
I think this covers the situation nicely, with the one
small exception I note below.

> clear scientific reason for such a guarantee, we believe that
> long-term monitoring programs -> are <- better handled through
> the normal proposal process, via progress reports and follow-up
> proposals every few years.
>

Dave

From: abridle (Alan Bridle)
To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu
Subject: NRAO Large Proposals Committee - monitoring
Date: Fri, 24 Jan 1997 15:49:26 -0500

Here is text that I would propose to add to the end of our discussion in Section 2, to address Don's concern re monitoring programs.

Any comments?

A.

----------%<----------

Before discussing how to set the threshold for the "skeptical review" process at each telescope, we note that the focus of this report is the "large" proposal that is relatively short in duration but wide in its scheduling impact. A time-based threshold for skeptical review could also be exceeded by long-term monitoring projects (variability, pulsar timing, astrometry) that are long in duration but narrow in scheduling impact per observing period. Should such proposals also be subject to "skeptical review"? We believe so, if and only if it is crucial to their scientific goals that the full duration of the program be guaranteed "up front" (to the extent that the NRAO's contract makes sense of guarantees beyond 5 years). Absent a clear scientific reason for such a guarantee, we believe that long-term monitoring programs are better handled through the normal proposal process, via progress reports and follow-up proposals every few years.

From: dbacker@bkypsr2.berkeley.edu (don backer 415 campbell 510-642-5128)
To: abridle@NRAO.EDU
Subject: Re: NRAO Large Proposals Committee - monitoring
Date: Mon, 27 Jan 1997 15:17:55 -0800

Alan,

I approve of your statement. It's is just thinking about one more
aspect of the process out in the open.

Don

From: abridle (Alan Bridle)
To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu
Subject: forwarded message from don backer
Date: Tue, 28 Jan 1997 09:40:34 -0500

------- start of forwarded message (RFC 934 encapsulation) -------
Content-Length: 117
Received: from cv3.cv.nrao.edu by polaris.cv.nrao.edu (AIX 3.2/UCB 5.64/4.07)
id AA27494; Mon, 27 Jan 1997 18:18:00 -0500
Received: from nak.berkeley.edu (nak.Berkeley.EDU [128.32.206.21]) by cv3.cv.nrao.edu (8.8.5/8.8.0/CV-2.3) with ESMTP id SAA29418 for <abridle@nrao.edu>; Mon, 27 Jan 1997 18:17:59 -0500 (EST)
Received: from bkypsr2.Berkeley.EDU (bkypsr2.Berkeley.EDU [128.32.92.52]) by nak.berkeley.edu (8.7.3/8.6.10) with SMTP id PAA26589 for <abridle@nrao.edu>; Mon, 27 Jan 1997 15:17:58 -0800 (PST)
Received: by bkypsr2.Berkeley.EDU (SMI-8.6/SMI-SVR4)
id PAA01011; Mon, 27 Jan 1997 15:17:55 -0800
Message-Id: <199701272317.PAA01011@bkypsr2.Berkeley.EDU>
From: dbacker@bkypsr2.berkeley.edu (don backer 415 campbell 510-642-5128)
To: abridle@NRAO.EDU
Subject: Re: NRAO Large Proposals Committee - monitoring
Date: Mon, 27 Jan 1997 15:17:55 -0800

Alan,

I approve of your statement. It's is just thinking about one more
aspect of the process out in the open.

Don
------- end -------

From: abridle (Alan Bridle)
To: dbacker@bkypsr2.berkeley.edu (don backer 415 campbell 510-642-5128)
Subject: Re: NRAO Large Proposals Committee - monitoring
Date: Tue, 28 Jan 1997 09:45:16 -0500

Don,

Glad the new para was suitable, I think we are very close
to done now. Thanks very much for your input on the
long-term issue, it is certainly worth spelling it out
as you suggested.

A.

From VM Tue Jan 28 11:57:13 1997
X-VM-v5-Data: ([nil nil nil nil nil nil nil nil nil]
["76773" "Tue" "28" "January" "1997" "11:20:53" "-0500" "Alan Bridle" "abridle" nil "2196"
"Final version of report" "^From:" nil nil "1" nil nil nil nil]
nil)
Content-Length: 76773
Received: by polaris.cv.nrao.edu (AIX 3.2/UCB 5.64/4.07)
id AA31055; Tue, 28 Jan 1997 11:20:53 -0500
Message-Id: <9701281620.AA31055@polaris.cv.nrao.edu>
From: abridle (Alan Bridle)
To: dbacker@astro.berkeley.edu, churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu, jhewitt@mit.edu, dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu
Subject: Final version of report
Date: Tue, 28 Jan 1997 11:20:53 -0500

Dear Don, Ed, Martha, Jackie, Dave, Fred,

Unless I hear a howl of protest from someone before the end of the day,
the attached Postscript file will be the final form of our report to
Paul Vanden Bout. It contains the addendum suggested by Paul to Rec.2
and the paragraph on long-term monitoring projects inserted following
the discussion with Don Backer. The only other changes since the last
draft were tiny cosmetic ones, as there have been no requests for
alterations other than these two.

I would like to thank you all very much for your contributions to the
work of this committee. From my perspective, these exercises are
never exactly a pleasure...but this one has been as close to that as
they come! I hope the community takes our suggestions as positively
as Paul has done so far.

Paul will write to you all soon to formally dissolve the committee,
I have told him to expect the final version of the report tomorrow.

Thank you once again,

Alan B.

P.S. if anyone needs the report as plain ASCII text, please let me
know.

----------%<----------

%!PS-Adobe-3.0 EPSF-2.0
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%%Title: LPCDRAFT.WPS
%%BoundingBox: 18 9 593 784
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%%DocumentSuppliedResources: (atend)
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/grestore ld/M/moveto ld/L/lineto ld/rmt/rmoveto ld/rlt/rlineto ld
/rct/rcurveto ld/st/stroke ld/n/newpath ld/sm/setmatrix ld/cm/currentmatrix
ld/cp/closepath ld/ARC/arcn ld/TR{65536 div}bd/lj/setlinejoin ld/lc
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/hB ed/hG ed/hR ed}bd/PC{pR pG pB sc}bd/pC{/pB ed/pG ed/pR ed}bd/sM
matrix def/PenW 1 def/iPen 5 def/mxF matrix def/mxE matrix def/mxUE
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showpage grestore}bd/#C{userdict begin/#copies ed end}bd/FEbuf 2 string
def/FEglyph(G)def/FE{1 exch{dup 16 FEbuf cvrs FEglyph exch 1 exch
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rotate 1 -1 scale}ifelse}ifelse}{pop cyP cyM sub exch 0 ne{cxM cxPg
add exch tr 180 rotate}{cxM exch tr 1 -1 scale}ifelse}ifelse 100 iRes
div dup scale 0 0 transform .25 add round .25 sub exch .25 add round
.25 sub exch itransform translate}bd/SJ{1 index 0 eq{pop pop/fBE false
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16#7C/bar 16#82/quotesinglbase 16#83/florin 16#84/quotedblbase 16#85
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/Ccedilla 16#C8/Egrave 16#C9/Eacute 16#CA/Ecircumflex 16#CB/Edieresis

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16#E0/agrave 16#E1/aacute 16#E2/acircumflex 16#E3/atilde 16#E4/adieresis
16#E5/aring 16#E6/ae 16#E7/ccedilla 16#E8/egrave 16#E9/eacute 16#EA
/ecircumflex 16#EB/edieresis 16#EC/igrave 16#ED/iacute 16#EE/icircumflex
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16#FE/thorn 16#FF/ydieresis] def/reencdict 12 dict def/IsChar{basefontdict
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newfont/Encoding get 3 1 roll put}bd/MapDegree{16#b0/degree IsChar{
/degree}{/ring}ifelse MapCh}bd/MapBB{16#a6/brokenbar IsChar{/brokenbar}{
/bar}ifelse MapCh}bd/ANSIFont{reencdict begin/newfontname ed/basefontname
ed FontDirectory newfontname known not{/basefontdict basefontname findfont
def/newfont basefontdict maxlength dict def basefontdict{exch dup/FID
ne{dup/Encoding eq{exch dup length array copy newfont 3 1 roll put}{exch
newfont 3 1 roll put}ifelse}{pop pop}ifelse}forall newfont/FontName
newfontname put 127 1 159{newfont/Encoding get exch/bullet put}for
ANSIVec aload pop ANSIVec length 2 idiv{MapCh}repeat MapDegree MapBB
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ed/str ed str length fBE not{dup 1 gt{1 sub}if}if/cbStr ed/dxGdi ed
/y0 ed/x0 ed str stringwidth dup 0 ne{/y1 ed/x1 ed y1 y1 mul x1 x1
mul add sqrt dxGdi exch div 1 sub dup x1 mul cbStr div exch y1 mul
cbStr div}{exch abs neg dxGdi add cbStr div exch}ifelse/dyExtra ed
/dxExtra ed x0 y0 M fBE{dxBreak 0 BCh dxExtra dyExtra str awidthshow}{dxExtra
dyExtra str ashow}ifelse fUL{x0 y0 M dxUL dyUL rmt ULlen fBE{Break
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y0 M dxSO dySO rmt ULlen fBE{Break add}if 0 mxUE transform gs rlt cyUL
sl [] 0 setdash st gr}if n/fBE false def}bd/font{/name ed/Ascent ed
0 ne/fT3 ed 0 ne/fSO ed 0 ne/fUL ed/Sy ed/Sx ed 10.0 div/ori ed -10.0
div/esc ed/BCh ed name findfont/xAscent 0 def/yAscent Ascent def/ULesc
esc def ULesc mxUE rotate pop fT3{/esc 0 def xAscent yAscent mxUE transform
/yAscent ed/xAscent ed}if [Sx 0 0 Sy neg xAscent yAscent] esc mxE
rotate mxF concatmatrix makefont setfont [Sx 0 0 Sy neg 0 Ascent] mxUE
mxUF concatmatrix pop fUL{currentfont dup/FontInfo get/UnderlinePosition
known not{pop/Courier findfont}if/FontInfo get/UnderlinePosition get
1000 div 0 exch mxUF transform/dyUL ed/dxUL ed}if fSO{0 .3 mxUF transform
/dySO ed/dxSO ed}if fUL fSO or{currentfont dup/FontInfo get/UnderlineThickness
known not{pop/Courier findfont}if/FontInfo get/UnderlineThickness get
1000 div Sy mul/cyUL ed}if}bd/min{2 copy gt{exch}if pop}bd/max{2 copy
lt{exch}if pop}bd/CP{/ft ed{{ft 0 eq{clip}{eoclip}ifelse}stopped{currentflat
1 add setflat}{exit}ifelse}loop}bd/patfont 10 dict def patfont begin
/FontType 3 def/FontMatrix [1 0 0 -1 0 0] def/FontBBox [0 0 16 16]
def/Encoding StandardEncoding def/BuildChar{pop pop 16 0 0 0 16 16
setcachedevice 16 16 false [1 0 0 1 .25 .25]{pat}imagemask}bd end/p{
/pat 32 string def{}forall 0 1 7{dup 2 mul pat exch 3 index put dup
2 mul 1 add pat exch 3 index put dup 2 mul 16 add pat exch 3 index
put 2 mul 17 add pat exch 2 index put pop}for}bd/pfill{/PatFont patfont
definefont setfont/ch(AAAA)def X0 64 X1{Y1 -16 Y0{1 index exch M ch
show}for pop}for}bd/vert{X0 w X1{dup Y0 M Y1 L st}for}bd/horz{Y0 w
Y1{dup X0 exch M X1 exch L st}for}bd/fdiag{X0 w X1{Y0 M X1 X0 sub dup
rlt st}for Y0 w Y1{X0 exch M Y1 Y0 sub dup rlt st}for}bd/bdiag{X0 w
X1{Y1 M X1 X0 sub dup neg rlt st}for Y0 w Y1{X0 exch M Y1 Y0 sub dup

neg rlt st}for}bd/AU{1 add cvi 15 or}bd/AD{1 sub cvi -16 and}bd/SHR{pathbbox
AU/Y1 ed AU/X1 ed AD/Y0 ed AD/X0 ed}bd/hfill{/w iRes 37.5 div round
def 0.1 sl [] 0 setdash n dup 0 eq{horz}if dup 1 eq{vert}if dup 2 eq{fdiag}if
dup 3 eq{bdiag}if dup 4 eq{horz vert}if 5 eq{fdiag bdiag}if}bd/F{/ft
ed fm 256 and 0 ne{gs FC ft 0 eq{fill}{eofill}ifelse gr}if fm 1536
and 0 ne{SHR gs HC ft CP fm 1024 and 0 ne{/Tmp save def pfill Tmp restore}{fm
15 and hfill}ifelse gr}if}bd/S{PenW sl PC st}bd/m matrix def/GW{iRes
12 div PenW add cvi}bd/DoW{iRes 50 div PenW add cvi}bd/DW{iRes 8 div
PenW add cvi}bd/SP{/PenW ed/iPen ed iPen 0 eq iPen 6 eq or{[] 0 setdash}if
iPen 1 eq{[DW GW] 0 setdash}if iPen 2 eq{[DoW GW] 0 setdash}if iPen
3 eq{[DW GW DoW GW] 0 setdash}if iPen 4 eq{[DW GW DoW GW DoW GW] 0
setdash}if}bd/E{m cm pop tr scale 1 0 moveto 0 0 1 0 360 arc cp m sm}bd
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div 4 1 roll atan/a2 ed atan/a1 ed sx sy scale a1 a2 ARC}def/A{m cm
pop tr AG m sm}def/P{m cm pop tr 0 0 M AG cp m sm}def/RRect{n 4 copy
M 3 1 roll exch L 4 2 roll L L cp}bd/RRCC{/r ed/y1 ed/x1 ed/y0 ed/x0
ed x0 x1 add 2 div y0 M x1 y0 x1 y1 r arcto 4{pop}repeat x1 y1 x0 y1
r arcto 4{pop}repeat x0 y1 x0 y0 r arcto 4{pop}repeat x0 y0 x1 y0 r
arcto 4{pop}repeat cp}bd/RR{2 copy 0 eq exch 0 eq or{pop pop RRect}{2
copy eq{pop RRCC}{m cm pop/y2 ed/x2 ed/ys y2 x2 div 1 max def/xs x2
y2 div 1 max def/y1 exch ys div def/x1 exch xs div def/y0 exch ys div
def/x0 exch xs div def/r2 x2 y2 min def xs ys scale x0 x1 add 2 div
y0 M x1 y0 x1 y1 r2 arcto 4{pop}repeat x1 y1 x0 y1 r2 arcto 4{pop}repeat
x0 y1 x0 y0 r2 arcto 4{pop}repeat x0 y0 x1 y0 r2 arcto 4{pop}repeat
m sm cp}ifelse}ifelse}bd/PP{{rlt}repeat}bd/OB{gs 0 ne{7 3 roll/y ed
/x ed x y translate ULesc rotate x neg y neg translate x y 7 -3 roll}if
sc B fill gr}bd/B{M/dy ed/dx ed dx 0 rlt 0 dy rlt dx neg 0 rlt cp}bd
/CB{B clip n}bd/ErrHandler{errordict dup maxlength exch length gt
dup{errordict begin}if/errhelpdict 12 dict def errhelpdict begin/stackunderflow(operand stack
underflow)def
/undefined(this name is not defined in a dictionary)def/VMerror(you have used up all the printer's
memory)def
/typecheck(operator was expecting a different type of operand)def
/ioerror(input/output error occured)def end{end}if errordict begin
/handleerror{$error begin newerror{/newerror false def showpage 72
72 scale/x .25 def/y 9.6 def/Helvetica findfont .2 scalefont setfont
x y moveto(Offending Command =)show/command load{dup type/stringtype
ne{(max err string)cvs}if show}exec/y y .2 sub def x y moveto(Error =)show
errorname{dup type dup(max err string)cvs show(:)show/stringtype
ne{(max err string)cvs}if show}exec errordict begin errhelpdict errorname
known{x 1 add y .2 sub moveto errhelpdict errorname get show}if end
/y y .4 sub def x y moveto(Stack =)show ostack{/y y .2 sub def x 1
add y moveto dup type/stringtype ne{(max err string)cvs}if show}forall
showpage}if end}def end}bd end
%%EndResource
/SVDoc save def
%%EndProlog
%%BeginSetup
Win35Dict begin
ErrHandler
%%EndSetup
SS
0 0 25 11 798 1100 300 SM
32 0 0 50 50 0 0 0 46 /Times-Bold /font29 ANSIFont font
0 0 0 fC

gs 2394 2720 0 247 CB
499 617 1404 (REPORT OF THE NRAO LARGE PROPOSALS COMMITTEE) 1404 SB
gr
32 0 0 50 50 0 0 0 45 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
979 971 444 (Alan H. Bridle \(Chair\)) 444 SB
gr
gs 2394 2720 0 247 CB
1022 1030 358 (Donald C. Backer) 358 SB
gr
gs 2394 2720 0 247 CB
973 1089 455 (Edward B. Churchwell) 455 SB
gr
gs 2394 2720 0 247 CB
1022 1148 357 (Martha P. Haynes) 357 SB
gr
gs 2394 2720 0 247 CB
993 1207 416 (Jacqueline N. Hewitt) 416 SB
gr
gs 2394 2720 0 247 CB
1050 1266 301 (David E. Hogg) 301 SB
gr
gs 2394 2720 0 247 CB
1042 1325 317 (K. Y. \(Fred\) Lo) 317 SB
gr
gs 2394 2720 0 247 CB
1037 1738 328 (28 January 1997) 328 SB
gr
EJ RS
%%PageTrailer
SS
0 0 25 11 798 1100 300 SM
32 0 0 50 50 0 0 0 46 /Times-Bold /font29 ANSIFont font
0 0 0 fC
gs 2394 2720 0 247 CB
874 263 654 (Summary of recommendations) 654 SB
gr
32 0 0 42 42 0 0 0 39 /Times-Bold /font29 ANSIFont font
gs 2394 2720 0 247 CB
303 522 871 (RECOMMENDATION 1: The Need for a Policy) 871 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
303 622 1637 (The NRAO should have a written, disseminated, policy for the treatment of large proposals. It is) 1637 SB
gr
gs 2394 2720 0 247 CB
303 672 1731 (important, however, that this written policy be flexible enough to cover a wide range of circumstances.) 1731 SB
gr
32 0 0 42 42 0 0 0 39 /Times-Bold /font29 ANSIFont font
gs 2394 2720 0 247 CB
303 872 1028 (RECOMMENDATION 2: Expanded "Skeptical Review") 1028 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font

gs 2394 2720 0 247 CB
303 972 1732 (All proposals that ask for more observing time than a \(telescope-specific\) threshold, and, at the NRAO) 1732 SB
gr
gs 2394 2720 0 247 CB
303 1022 1725 (Director's discretion, some proposals requesting less time than this, should initially be evaluated by an) 1725 SB
gr
gs 2394 2720 0 247 CB
303 1072 995 (expanded "skeptical review" panel of five or more referees.) 995 SB
gr
gs 2394 2720 0 247 CB
303 1172 1699 (The panel should be drawn from the normal pool of proposal referees for the telescope, augmented if) 1699 SB
gr
gs 2394 2720 0 247 CB
303 1222 1703 (necessary by others who have recently been proposal referees. The panel should be roughly balanced) 1703 SB
gr
gs 2394 2720 0 247 CB
303 1272 1620 (between "experts" in the astronomical sub-discipline addressed by the large proposal, and cross-) 1620 SB
gr
gs 2394 2720 0 247 CB
303 1322 389 (disciplinary "skeptics".) 389 SB
gr
gs 2394 2720 0 247 CB
303 1422 416 (The panel should assess:) 416 SB
gr
gs 2394 2720 0 247 CB
453 1522 1530 (the scientific priority for the proposal in competition with all other astronomy that is being) 1530 SB
gr
32 0 0 42 42 0 0 0 42 /Symbol font
gs 2394 2720 0 247 CB
303 1522 19 (\267) 19 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
453 1572 361 (done at the telescope,) 361 SB
gr
gs 2394 2720 0 247 CB
453 1672 867 (whether the telescope is well suited to the proposal,) 867 SB
gr
32 0 0 42 42 0 0 0 42 /Symbol font
gs 2394 2720 0 247 CB
303 1672 19 (\267) 19 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
453 1772 1524 (whether the total duration proposed for the project is well-defined and commensurate with) 1524 SB
gr
32 0 0 42 42 0 0 0 42 /Symbol font
gs 2394 2720 0 247 CB

303 1772 19 (\267) 19 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
453 1822 364 (the scientific priority,) 364 SB
gr
gs 2394 2720 0 247 CB
453 1922 1565 (whether there should be any proprietary "holding time" for the data, and, if so, for how long,) 1565 SB
gr
32 0 0 42 42 0 0 0 42 /Symbol font
gs 2394 2720 0 247 CB
303 1922 19 (\267) 19 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
453 2022 1559 (whether the proposal is suitable for use as a backup project in a dynamic scheduling strategy) 1559 SB
gr
32 0 0 42 42 0 0 0 42 /Symbol font
gs 2394 2720 0 247 CB
303 2022 19 (\267) 19 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont 0ont
gs 2394 2720 0 247 CB
453 2072 286 (for the telescope.) 286 SB
gr
gs 2394 2720 0 247 CB
303 2172 1603 (The panel will provide the Director with a recommended course of action and a summary of its) 1603 SB
gr
gs 2394 2720 0 247 CB
303 2222 228 (deliberations.) 228 SB
gr
gs 2394 2720 0 247 CB
303 2322 507 (\(Also see Recommendation 5\)) 507 SB
gr
32 0 0 42 42 0 0 0 39 /Times-Bold /font29 ANSIFont font
gs 2394 2720 0 247 CB
303 2522 682 (RECOMMENDATION 3: Thresholds) 682 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
303 2622 1794 (For the VLA and VLBA, the threshold for skeptical review should be around 300 hours of observing time.) 1794 SB
gr
gs 2394 2720 0 247 CB
303 2672 1740 (For the 12-meter telescope, it should be around 1000 hours. For the GBT, the threshold should change) 1740 SB
gr
gs 2394 2720 0 247 CB
303 2722 1768 (as new instruments and higher-frequency capabilities are commissioned, and will need continual review.) 1768 SB
gr
gs 2394 2720 0 247 CB

303 2772 1699 (In all cases, these thresholds should be explicitly "fuzzy", i.e. the policy should make it clear that the) 1699 SB
gr
gs 2394 2720 0 247 CB
303 2822 1717 (NRAO Director has the option to send some proposals below these thresholds for expanded "skeptical) 1717 SB
gr
gs 2394 2720 0 247 CB
303 2872 140 (review".) 140 SB
gr
EJ RS
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SS
0 0 25 11 798 1100 300 SM
32 0 0 42 42 0 0 0 39 /Times-Bold /font29 ANSIFont font
0 0 0 fC
gs 2394 2720 0 247 CB
303 263 1100 (RECOMMENDATION 4: Volunteering for Skeptical Review) 1100 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
303 363 1698 (Proposers of "moderate-sized" \(below-threshold\) projects may also volunteer for expanded "skeptical) 1698 SB
gr
gs 2394 2720 0 247 CB
303 413 1743 (review" of their proposals. This option provides a way to obtain a stronger guarantee of observing time) 1743 SB
gr
gs 2394 2720 0 247 CB
303 463 1704 (for moderate-sized projects whose science could clearly be advanced by receiving such guarantees, in) 1704 SB
gr
gs 2394 2720 0 247 CB
303 513 1702 (return for submitting them to a more demanding initial review. We emphasize that we see this as an) 1702 SB
gr
gs 2394 2720 0 247 CB
303 563 1740 (option to be used rarely, and only in exceptional cases where the science would suffer if the project was) 1740 SB
gr
gs 2394 2720 0 247 CB
303 613 901 (done piecemeal through the regular proposal process.) 901 SB
gr
32 0 0 42 42 0 0 0 39 /Times-Bold /font29 ANSIFont font
gs 2394 2720 0 247 CB
303 863 957 (RECOMMENDATION 5: Ongoing "Expert" Review) 957 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
303 963 1670 (The skeptical review panel for a large proposal should also advise the NRAO Director whether any) 1670 SB
gr
gs 2394 2720 0 247 CB
303 1013 1151 (further "expert" review of the proposal is needed in four main areas:) 1151 SB
gr

gs 2394 2720 0 247 CB
453 1113 636 (scientific issues of observing stra3egy,) 636 SB
gr
32 0 0 42 42 0 0 0 42 /Symbol font
gs 2394 2720 0 247 CB
303 1113 19 (\267) 19 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
453 1163 987 (technical issues of observing strategy and data acquisition,) 987 SB
gr
32 0 0 42 42 0 0 0 42 /Symbol font
gs 2394 2720 0 247 CB
303 1163 19 (\267) 19 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
453 1213 679 (ongoing review of project progress, and,) 679 SB
gr
32 0 0 42 42 0 0 0 42 /Symbol font
gs 2394 2720 0 247 CB
303 1213 19 (\267) 19 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
453 1263 658 (public availability of the data products.) 658 SB
gr
32 0 0 42 42 0 0 0 42 /Symbol font
gs 2394 2720 0 247 CB
303 1263 19 (\267) 19 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
303 1363 1771 (Not all large proposals will require further review in all of these areas, and many may not require further) 1771 SB
gr
gs 2394 2720 0 247 CB
303 1413 1714 (review at all. If a highly-rated large proposal is of sufficient scope or technical complexity to warrant) 1714 SB
gr
gs 2394 2720 0 247 CB
303 1463 1725 (ongoing review, the NRAO should make every effort to achieve this without over-burdening either the) 1725 SB
gr
gs 2394 2720 0 247 CB
303 1513 1791 (proposers or the expert referees. The arrangements for any ongoing "expert review" would be made at the) 1791 SB
gr
gs 2394 2720 0 247 CB
303 1563 960 (discretion of the NRAO Director on a case-by-case basis.) 960 SB
gr
32 0 0 42 42 0 0 0 39 /Times-Bold /font29 ANSIFont font
gs 2394 2720 0 247 CB
303 1813 1412 (RECOMMENDATION 6: Upper Limits to the Total Time for Large Proposals) 1412 SB

gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
303 1913 1775 (If several large proposals for a given telescope are highly rated by the skeptical review panels, the NRAO) 1775 SB
gr
gs 2394 2720 0 247 CB
303 1963 1650 (Director should seek advice from a cross-disciplinary subset of the regular proposal referees about) 1650 SB
gr
gs 2394 2720 0 247 CB
303 2013 1729 (upper limits to the fraction of all observing time that should be devoted to them. Any policy statement) 1729 SB
gr
gs 2394 2720 0 247 CB
303 2063 1717 (about such upper limits must emphasize they will not be interpreted as "quotas" to be filled with large) 1717 SB
gr
gs 2394 2720 0 247 CB
303 2113 306 (projects, however.) 306 SB
gr
32 0 0 42 42 0 0 0 39 /Times-Bold /font29 ANSIFont font
gs 2394 2720 0 247 CB
303 2363 1048 (RECOMMENDATION 7: Announcements of Opportunity) 1048 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
303 2463 1792 (The NRAO should not make Announcements of Opportunity for the submission of large proposals. Large) 1792 SB
gr
gs 2394 2720 0 247 CB
303 2513 1658 (proposals should be submitted at the normal proposal deadlines, without special solicitation by the) 1658 SB
gr
gs 2394 2720 0 247 CB
303 2563 205 (observatory.) 205 SB
gr
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SS
0 0 25 11 798 1100 300 SM
32 0 0 50 50 0 0 0 46 /Times-Bold /font29 ANSIFont font
0 0 0 fC
gs 2394 2720 0 247 CB
303 263 1154 (1. Is a "Large Proposal" Policy Needed at the NRAO?) 1154 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
303 372 1115 (We believe that it is. Our reasons for concluding this are twofold:) 1115 SB
gr
gs 2394 2720 0 247 CB
303 472 1712 (\(a\) Large projects will \(by any definition\) be ones that impact other NRAO users' work to an unusual) 1712 SB
gr
gs 2394 2720 0 247 CB

303 522 1761 (extent. The NRAO should therefore have a process that can reassure its users that the few large projects) 1761 SB
gr
gs 2394 2720 0 247 CB
303 572 1760 (which do get scheduled have met unusual standards of scientific importance and of uniqueness, and also) 1760 SB
gr
gs 2394 2720 0 247 CB
303 622 1712 (that they are of finite length. To the extent that the constraints imposed on 'standard' proposals by the) 1712 SB
gr
gs 2394 2720 0 247 CB
303 672 1751 (VLA surveys have been widely accepted, there is consensus not only that these surveys are scientifically) 1751 SB
gr
gs 2394 2720 0 247 CB
303 722 1661 (important but also that they could only have been done with the VLA. It is also important that the) 1661 SB
gr
gs 2394 2720 0 247 CB
303 772 1769 (proposed disruption to other work ends eventually. We believe that the NRAO must be able to show that) 1769 SB
gr
gs 2394 2720 0 247 CB
303 822 1741 (it is carefully balancing the scientific worth of large projects against their impact on smaller ones when) 1741 SB
gr
gs 2394 2720 0 247 CB
303 872 1768 (making future decisions about scheduling large projects. We suggest that a key ingredient in this will be) 1768 SB
gr
gs 2394 2720 0 247 CB
303 922 1550 (a more extensive "skeptical review" process for proposals that are above a certain threshold.) 1550 SB
gr
gs 2394 2720 0 247 CB
303 1022 1594 (\(b\) Most large projects will also generate databases that are of interest to a large community of) 1594 SB
gr
gs 2394 2720 0 247 CB
303 1072 1657 (astronomers. It is therefore appropriate to seek that community's advice about the scope of a large) 1657 SB
gr
gs 2394 2720 0 247 CB
303 1122 1669 (project, about its data selection parameters, about data reduction methods, and about archiving and) 1669 SB
gr
gs 2394 2720 0 247 CB
303 1172 1794 (dissemination plans. A further, and possibly ongoing, "expert review" of large projects may therefore also) 1794 SB
gr
gs 2394 2720 0 247 CB
303 1222 1705 (be needed once they have passed initial "skeptical review". We also note that some large projects are) 1705 SB
gr

gs 2394 2720 0 247 CB
303 1272 1712 (merely long projects \(e.g. large sample studies in which the individual observations are not especially) 1712 SB
gr
gs 2394 2720 0 247 CB
303 1322 1790 (challenging\) but others may push the limits of the instrumentation in sensitivity, data rate or data volume.) 1790 SB
gr
gs 2394 2720 0 247 CB
303 1372 1710 (The latter may benefit from expert technical advice from an expanded community at an early stage of) 1710 SB
gr
gs 2394 2720 0 247 CB
303 1422 162 (planning.) 162 SB
gr
gs 2394 2720 0 247 CB
303 1522 1759 (We do not see how the NRAO could address either of the above areas satisfactorily just by extending the) 1759 SB
gr
gs 2394 2720 0 247 CB
303 1572 1753 (normal proposal review process to projects of arbitrarily large scope. We do not see how to measure the) 1753 SB
gr
gs 2394 2720 0 247 CB
303 1622 1735 (breadth of support for large proposals, or to satisfy the user community that their observing parameters) 1735 SB
gr
gs 2394 2720 0 247 CB
303 1672 1643 (have been optimized, without having a threshold above which proposals get extra initial scrutiny.) 1643 SB
gr
gs 2394 2720 0 247 CB
303 1772 498 (Thus, a new policy is needed.) 498 SB
gr
gs 2394 2720 0 247 CB
303 1872 1744 (It also seems clear that no single-forum review could address all of the above issues well. Our proposal) 1744 SB
gr
gs 2394 2720 0 247 CB
303 1922 1438 (for a ne policy has several optional stages \(after the initial review\) to deal with this.) 1438 SB
gr
gs 2394 2720 0 247 CB
303 2022 1696 (The first question in the charge to the Committee also asked us whether, if a new policy is needed, it) 1696 SB
gr
gs 2394 2720 0 247 CB
303 2072 1603 (should be written down and disseminated. It will be important to strike an appropriate balance) 1603 SB
gr
gs 2394 2720 0 247 CB
303 2122 1795 (between \(a\) clarifying the observatory's future intentions about large projects and \(b\) specifying a policy in) 1795 SB
gr
gs 2394 2720 0 247 CB

303 2172 1762 (detail now that proves to be ill-suited to particular cases in future, or which is unnecessarily burdensome) 1762 SB
gr
gs 2394 2720 0 247 CB
303 2222 1728 (either to proposers or reviewers. We therefore seek an approach that has built-in flexibility, but which) 1728 SB
gr
gs 2394 2720 0 247 CB
303 2272 1241 (can and should be written down and disseminated to the user community.) 1241 SB
gr
32 0 0 42 42 0 0 0 39 /Times-Bold /font29 ANSIFont font
gs 2394 2720 0 247 CB
303 2480 871 (RECOMMENDATION 1: The Need for a Policy) 871 SB
gr
0 0 0 fC
/fm 256 def
1811 3 295 2472 B
1 F
n
3 60 295 2472 B
1 F
n
3 60 2103 2472 B
1 F
n
3 52 295 2530 B
1 F
n
3 52 2103 2530 B
1 F
n
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
303 2580 1637 (The NRAO should have a written, disseminated, policy for the treatment of large proposals. It is) 1637 SB
gr
3 52 295 2580 B
1 F
n
3 52 2103 2580 B
1 F
n
gs 2394 2720 0 247 CB
303 2630 1731 (important, however, that this written policy be flexible enough to cover a wide range of circumstances.) 1731 SB
gr
3 57 295 2630 B
1 F
n
3 57 2103 2630 B
1 F
n
1811 3 295 2684 B
1 F

n
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32 0 0 50 50 0 0 0 46 /Times-Bold /font29 ANSIFont font
0 0 0 fC
gs 2394 2720 0 247 CB
303 263 1118 (2. A Threshold for an Enhanced "Skeptical Review") 1118 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
303 381 1665 ("Normal" proposals are reviewed by small specialized panels of discipline experts from outside the) 1665 SB
gr
gs 2394 2720 0 247 CB
303 431 1688 (NRAO. A favorable review from within the discipline is a necessary, but we believe an insufficient,) 1688 SB
gr
gs 2394 2720 0 247 CB
303 481 1738 (condition for scheduling a "large" proposal. A project large enough to constrain work in other areas of) 1738 SB
gr
gs 2394 2720 0 247 CB
303 531 1754 (astronomy significantly should be asked to impress a review panel that also includes astronomers whose) 1754 SB
gr
gs 2394 2720 0 247 CB
303 581 1050 (work will not directly benefit from the project's final database.) 1050 SB
gr
gs 2394 2720 0 247 CB
303 681 584 (Such an initial review should ask :) 584 SB
gr
gs 2394 2720 0 247 CB
453 781 1534 (whether a large proposal has high enough scientific priority to warrant the displacement of) 1534 SB
gr
32 0 0 42 42 0 0 0 42 /Symbol font
gs 2394 2720 0 247 CB
303 781 19 (\267) 19 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
453 831 542 (normal work in other areas, and) 542 SB
gr
gs 2394 2720 0 247 CB
453 881 1536 (whether the proposal is well suited to the NRAO telescope \(particularly, that it is not better) 1536 SB
gr
32 0 0 42 42 0 0 0 42 /Symbol font
gs 2394 2720 0 247 CB
303 881 19 (\267) 19 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB

453 931 626 (suited to some other radio telescope\).) 626 SB
gr
gs 2394 2720 0 247 CB
303 1031 1638 (An important ingredient in community acceptance of large proposals that displace other research) 1638 SB
gr
gs 2394 2720 0 247 CB
303 1081 1754 (significantly is that the duration of the large proposal is well understood, finite, and commensurate with) 1754 SB
gr
gs 2394 2720 0 247 CB
303 1131 1721 (the scientific priority of the project. It is therefore important to establish before a project begins that a) 1721 SB
gr
gs 2394 2720 0 247 CB
303 1181 1605 (specific \(finite\) grant of observing time is involved, and that any extension beyond this must be) 1605 SB
gr
gs 2394 2720 0 247 CB
303 1231 1690 (re-applied for either through the normal proposal process \(if small\) or by further skeptical review \(if) 1690 SB
gr
gs 2394 2720 0 247 CB
303 1281 110 (large\).) 110 SB
gr
gs 2394 2720 0 247 CB
303 1381 1792 (The review panels should also be asked to advise about the appropriateness, and length, of any proprietary) 1792 SB
gr
gs 2394 2720 0 247 CB
303 1431 1596 ("holding time" for the data from large proposals. It is essential that the proposers and the user) 1596 SB
gr
gs 2394 2720 0 247 CB
303 1481 1788 (community clearly understand what has been agreed about the time scale of public release of data before a) 1788 SB
gr
gs 2394 2720 0 247 CB
303 1531 1661 (project is scheduled. Large proposals must therefore address this issue as part of their submission.) 1661 SB
gr
gs 2394 2720 0 247 CB
303 1631 1738 (If the telescope is one on which dynamic scheduling is used, the "skeptical review" panel might also be) 1738 SB
gr
gs 2394 2720 0 247 CB
303 1681 1650 (asked to comment on whether a proposal is appropriate for use as part of that scheduling strategy.) 1650 SB
gr
gs 2394 2720 0 247 CB
303 1781 1781 (The expanded "skeptical review" panels for large proposals should be drawn from people who are already) 1781 SB
gr
gs 2394 2720 0 247 CB
303 1831 1771 (refereeing other discipline areas for that telescope. For the single dishes, it may

be necessary to augment) 1771 SB
gr
gs 2394 2720 0 247 CB
303 1881 1746 (the current referee group because there may not be enough current referees for the job. Recent referees,) 1746 SB
gr
gs 2394 2720 0 247 CB
303 1931 1035 (and other cross-disciplinary experts, should then be co-opted.) 1035 SB
gr
gs 2394 2720 0 247 CB
303 2031 1759 (The heart of our suggestion is therefore that any proposal exceeding some threshold \(in hours, discussed) 1759 SB
gr
gs 2394 2720 0 247 CB
303 2081 1700 (quantitatively below\) be reviewed first by a "skeptical review" panel drawn from the pool of proposal) 1700 SB
gr
gs 2394 2720 0 247 CB
303 2131 1787 (referees for that telescope, but representing all major astronomical sub-disciplines served by the telescope.) 1787 SB
gr
gs 2394 2720 0 247 CB
303 2181 1715 (This would allow some of the same referees who judge smaller projects to weigh their priority against) 1715 SB
gr
gs 2394 2720 0 247 CB
303 2231 1770 (those of any large projects that might use up all their time. It ensures that large projects will be judged in) 1770 SB
gr
gs 2394 2720 0 247 CB
303 2281 1751 (the specific context of their impact on the other work currently proposed for the telescope, by a group of) 1751 SB
gr
gs 2394 2720 0 247 CB
303 2331 530 (people well positioned to do so.) 530 SB
gr
gs 2394 2720 0 247 CB
303 2431 302 (The questions of :) 302 SB
gr
gs 2394 2720 0 247 CB
453 2531 1593 (how to balance time awarded to large proposals against smaller proposals addressing the same) 1593 SB
gr
32 0 0 42 42 0 0 0 42 /Symbol font
gs 2394 2720 0 247 CB
303 2531 19 (\267) 19 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
453 2581 206 (science, and) 206 SB
gr
gs 2394 2720 0 247 CB
453 2631 1489 (what guarantees \(of priority over others with similar scientific intent\) should be given to) 1489 SB
gr

32 0 0 42 42 0 0 0 42 /Symbol font
gs 2394 2720 0 247 CB
303 2631 19 (\267) 19 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
453 2681 795 (large proposals once they have been scheduled,) 795 SB
gr
gs 2394 2720 0 247 CB
303 2781 1746 (are also best handled by panels whose members referee both large and small proposals. In other words,) 1746 SB
gr
gs 2394 2720 0 247 CB
303 2831 1786 (with the proposed composition of the skeptical review panels, questions of priority among large and small) 1786 SB
gr
gs 2394 2720 0 247 CB
303 2881 1762 (proposals with similar science goals can be handled as they are now within the normal proposal process.) 1762 SB
gr
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32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
0 0 0 fC
gs 2394 2720 0 247 CB
303 313 1679 (We strongly prefer this approach to that of having a separate standing committee of "large proposal) 1679 SB
gr
gs 2394 2720 0 247 CB
303 363 1706 (reviewers" who do not participate in the normal proposal-review process. Such a separate committee) 1706 SB
gr
gs 2394 2720 0 247 CB
303 413 1750 (would be less aware of the overall scientific context with which large proposal\(s\) would compete. Also,) 1750 SB
gr
gs 2394 2720 0 247 CB
303 463 1653 (the act of setting up a separate process for reviewing large proposals could itself generate pressure) 1653 SB
gr
gs 2394 2720 0 247 CB
303 513 1249 (to have some such proposals scheduled. We do not think this is desirable.) 1249 SB
gr
gs 2394 2720 0 247 CB
303 613 1731 (Before discussing how to set the threshold for the "skeptical review" process at each telescope, we note) 1731 SB
gr
gs 2394 2720 0 247 CB
303 663 1671 (that the focus of this report is the "large" proposal that is relatively short in duration but wide in its) 1671 SB
gr
gs 2394 2720 0 247 CB

303 713 1699 (scheduling impact. A time-based threshold for skeptical review could also be exceeded by long-term) 1699 SB
gr
gs 2394 2720 0 247 CB
303 763 1655 (monitoring projects \(variability, pulsar timing, astrometry\) that are long in duration but narrow in) 1655 SB
gr
gs 2394 2720 0 247 CB
303 813 1789 (scheduling impact per observing period. Should such proposals also be subject to "skeptical review"? We) 1789 SB
gr
gs 2394 2720 0 247 CB
303 863 1673 (believe so, if and only if it is crucial to their scientific goals that the full duration of the program be) 1673 SB
gr
gs 2394 2720 0 247 CB
303 913 1779 (guaranteed "up front" \(to the extent that the NRAO's contract makes sense of guarantees beyond 5 years\).) 1779 SB
gr
gs 2394 2720 0 247 CB
303 963 1765 (Absent a clear scientific reason for such a guarantee, we believe that long-term monitoring programs are) 1765 SB
gr
gs 2394 2720 0 247 CB
303 1013 1742 (better handled through the normal proposal process, via progress reports and follow-up proposals every) 1742 SB
gr
gs 2394 2720 0 247 CB
303 1063 169 (few years.) 169 SB
gr
32 0 0 42 42 0 0 0 39 /Times-Bold /font29 ANSIFont font
gs 2394 2720 0 247 CB
303 1221 1028 (RECOMMENDATION 2: Expanded "Skeptical Review") 1028 SB
gr
0 0 0 fC
/fm 256 def
1811 3 295 1213 B
1 F
n
3 60 295 1213 B
1 F
n
3 60 2103 1213 B
1 F
n
3 52 295 1271 B
1 F
n
3 52 2103 1271 B
1 F
n
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
303 1321 1732 (All proposals that ask for more observing time than a \(telescope-specific\) threshold, and, at the NRAO) 1732 SB

gr
3 52 295 1321 B
1 F
n
3 52 2103 1321 B
1 F
n
gs 2394 2720 0 247 CB
303 1371 1725 (Director's discretion, some proposals requesting less time than this, should initially be evaluated by an) 1725 SB
gr
3 52 295 1371 B
1 F
n
3 52 2103 1371 B
1 F
n
gs 2394 2720 0 247 CB
303 1421 995 (expanded "skeptical review" panel of five or more referees.) 995 SB
gr
3 52 295 1421 B
1 F
n
3 52 2103 1421 B
1 F
n
3 52 295 1471 B
1 F
n
3 52 2103 1471 B
1 F
n
gs 2394 2720 0 247 CB
303 1521 1699 (The panel should be drawn from the normal pool of proposal referees for the telescope, augmented if) 1699 SB
gr
3 52 295 1521 B
1 F
n
3 52 2103 1521 B
1 F
n
gs 2394 2720 0 247 CB
303 1571 1703 (necessary by others who have recently been proposal referees. The panel should be roughly balanced) 1703 SB
gr
3 52 295 1571 B
1 F
n
3 52 2103 1571 B
1 F
n
gs 2394 2720 0 247 CB
303 1621 1620 (between "experts" in the astronomical sub-discipline addressed by the large proposal, and cross-) 1620 SB

gr
3 52 295 1621 B
1 F
n
3 52 2103 1621 B
1 F
n
gs 2394 2720 0 247 CB
303 1671 389 (disciplinary "skeptics".) 389 SB
gr
3 52 295 1671 B
1 F
n
3 52 2103 1671 B
1 F
n
3 52 295 1721 B
1 F
n
3 52 2103 1721 B
1 F
n
gs 2394 2720 0 247 CB
303 1771 416 (The panel should assess:) 416 SB
gr
3 52 295 1771 B
1 F
n
3 52 2103 1771 B
1 F
n
3 52 295 1821 B
1 F
n
3 52 2103 1821 B
1 F
n
gs 2394 2720 0 247 CB
453 1871 1530 (the scientific priority for the proposal in competition with all other astronomy that is being) 1530 SB
gr
32 0 0 42 42 0 0 0 42 /Symbol font
gs 2394 2720 0 247 CB
303 1871 19 (\267) 19 SB
gr
3 52 295 1871 B
1 F
n
3 52 2103 1871 B
1 F
n
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
453 1921 361 (done at the telescope,) 361 SB
gr

3 52 295 1921 B
1 F
n
3 52 2103 1921 B
1 F
n
3 52 295 1971 B
1 F
n
3 52 2103 1971 B
1 F
n
gs 2394 2720 0 247 CB
453 2021 867 (whether the telescope is well suited to the proposal,) 867 SB
gr
32 0 0 42 42 0 0 0 42 /Symbol font
gs 2394 2720 0 247 CB
303 2021 19 (\267) 19 SB
gr
3 52 295 2021 B
1 F
n
3 52 2103 2021 B
1 F
n
3 52 295 2071 B
1 F
n
3 52 2103 2071 B
1 F
n
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
453 2121 1524 (whether the total duration proposed for the project is well-defined and
commensurate with) 1524 SB
gr
32 0 0 42 42 0 0 0 42 /Symbol font
gs 2394 2720 0 247 CB
303 2121 19 (\267) 19 SB
gr
3 52 295 2121 B
1 F
n
3 52 2103 2121 B
1 F
n
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
453 2171 364 (the scientific priority,) 364 SB
gr
3 52 295 2171 B
1 F
n
3 52 2103 2171 B
1 F

n
3 52 295 2221 B
1 F
n
3 52 2103 2221 B
1 F
n
gs 2394 2720 0 247 CB
453 2271 1565 (whether there should be any proprietary "holding time" for the data, and, if so, for how long,) 1565 SB
gr
32 0 0 42 42 0 0 0 42 /Symbol font
gs 2394 2720 0 247 CB
303 2271 19 (\267) 19 SB
gr
3 52 295 2271 B
1 F
n
3 52 2103 2271 B
1 F
n
3 52 295 2321 B
1 F
n
3 52 2103 2321 B
1 F
n
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
453 2371 1559 (whether the proposal is suitable for use as a backup project in a dynamic scheduling strategy) 1559 SB
gr
32 0 0 42 42 0 0 0 42 /Symbol font
gs 2394 2720 0 247 CB
303 2371 19 (\267) 19 SB
gr
3 52 295 2371 B
1 F
n
3 52 2103 2371 B
1 F
n
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
453 2421 286 (for the telescope.) 286 SB
gr
3 52 295 2421 B
1 F
n
3 52 2103 2421 B
1 F
n
3 52 295 2471 B
1 F
n

3 52 2103 2471 B
1 F
n
gs 2394 2720 0 247 CB
303 2521 1603 (The panel will provide the Director with a recommended course of action and a summary of its) 1603 SB
gr
3 52 295 2521 B
1 F
n
3 52 2103 2521 B
1 F
n
gs 2394 2720 0 247 CB
303 2571 228 (deliberations.) 228 SB
gr
3 52 295 2571 B
1 F
n
3 52 2103 2571 B
1 F
n
3 52 295 2621 B
1 F
n
3 52 2103 2621 B
1 F
n
gs 2394 2720 0 247 CB
303 2671 507 (\(Also see Recommendation 5\)) 507 SB
gr
3 57 295 2671 B
1 F
n
3 57 2103 2671 B
1 F
n
1811 3 295 2725 B
1 F
n
EJ RS
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SS
0 0 25 11 798 1100 300 SM
32 0 0 50 50 0 0 0 46 /Times-Bold /font29 ANSIFont font
0 0 0 fC
gs 2394 2720 0 247 CB
303 263 959 (3. Setting Thresholds for "Skeptical Review") 959 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
303 440 409 (At the VLA and VLBA:) 409 SB
gr
gs 2394 2720 0 247 CB
303 540 1755 (We suggest that the threshold for an expanded initial review should be set in an

explicitly "fuzzy" range) 1755 SB
gr
gs 2394 2720 0 247 CB
303 590 1773 (of 200-300 hours of observing time. \(300 hours coreesponds to about 2 weeks of schedule time if done in) 1773 SB
gr
gs 2394 2720 0 247 CB
303 640 1781 (one session.\) Since 1990, use of this criterion to trigger additional review would have affected only about) 1781 SB
gr
gs 2394 2720 0 247 CB
303 690 1656 (one project previously treated as "standard" at the VLA, plus the two VLA surveys. It would have) 1656 SB
gr
gs 2394 2720 0 247 CB
303 740 1753 (affected five previously treated as "standard" at the VLBA. \(These statements are based on statistics for) 1753 SB
gr
gs 2394 2720 0 247 CB
303 790 1784 (the VLA and VLBA furnished to us by Barry Clark.\) The number of past proposals that would have been) 1784 SB
gr
gs 2394 2720 0 247 CB
303 840 1726 (exposed to "skeptical review" remains modest wherever the threshold could be set in the few-hundred-) 1726 SB
gr
gs 2394 2720 0 247 CB
303 890 559 (hour range \(for these telescopes\).) 559 SB
gr
gs 2394 2720 0 247 CB
303 1040 444 (At the 12-meter telescope:) 444 SB
gr
gs 2394 2720 0 247 CB
303 1140 1613 (We believe that the main criterion for setting the threshold is "significant displacement of other) 1613 SB
gr
gs 2394 2720 0 247 CB
303 1190 1741 (proposals", so a reasonable criterion is that the threshold should be around 10 times the mean length of) 1741 SB
gr
gs 2394 2720 0 247 CB
303 1240 1711 (scheduled proposals. A threshold around 1000 hours might therefore be more appropriate for the 12-) 1711 SB
gr
gs 2394 2720 0 247 CB
303 1290 271 (meter telescope.) 271 SB
gr
gs 2394 2720 0 247 CB
303 1440 211 (At the GBT:) 211 SB
gr
gs 2394 2720 0 247 CB
303 1540 1592 (In the case of the GBT, we can expect proposal pressure to be a strong function of time as new) 1592 SB
gr
gs 2394 2720 0 247 CB

303 1590 1760 (instrumental capabilities are commissioned. There may however be times early on when instruments are) 1760 SB
gr
gs 2394 2720 0 247 CB
303 1640 1690 (unexpectedly unavailable, and dynamic scheduling is needed. There may be good reasons to seek to) 1690 SB
gr
gs 2394 2720 0 247 CB
303 1690 1583 (combine some classes of large proposal with a dynamic scheduling strategy: e.g., some survey) 1583 SB
gr
gs 2394 2720 0 247 CB
303 1740 1611 (observations at low frequencies might be appropriate as "backup" projects at times when higher) 1611 SB
gr
gs 2394 2720 0 247 CB
303 1790 1760 (frequencies are unavailable due to weather or equipment problems. We suggest that a working group be) 1760 SB
gr
gs 2394 2720 0 247 CB
303 1840 1779 (established to examine such issues for large proposals at the GBT, both with regard to setting appropriate) 1779 SB
gr
gs 2394 2720 0 247 CB
303 1890 1669 (upper limits to the time allocation for large proposals, and with regard to their role in any dynamic) 1669 SB
gr
gs 2394 2720 0 247 CB
303 1940 623 (scheduling strategy for the telescope.) 623 SB
gr
gs 2394 2720 0 247 CB
303 2090 1683 (Our main reason for suggesting a "fuzzy" threshold for the initial "skeptical review", i.e. an explicit) 1683 SB
gr
gs 2394 2720 0 247 CB
303 2140 1655 (statement that discretion will be exercised by the NRAO in applying the criterion, is to discourage) 1655 SB
gr
gs 2394 2720 0 247 CB
303 2190 1441 (attempts to avoid the process by tailoring proposals to be just under a strict threshold.) 1441 SB
gr
32 0 0 42 42 0 0 0 39 /Times-Bold /font29 ANSIFont font
gs 2394 2720 0 247 CB
303 2398 682 (RECOMMENDATION 3: Thresholds) 682 SB
gr
0 0 0 fC
/fm 256 def
1811 3 295 2390 B
1 F
n
3 60 295 2390 B
1 F
n
3 60 2103 2390 B

1 F
n
3 52 295 2448 B
1 F
n
3 52 2103 2448 B
1 F
n
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
303 2498 1794 (For the VLA and VLBA, the threshold for skeptical review should be around 300 hours of observing time.) 1794 SB
gr
3 52 295 2498 B
1 F
n
3 52 2103 2498 B
1 F
n
gs 2394 2720 0 247 CB
303 2548 1740 (For the 12-meter telescope, it should be around 1000 hours. For the GBT, the threshold should change) 1740 SB
gr
3 52 295 2548 B
1 F
n
3 52 2103 2548 B
1 F
n
gs 2394 2720 0 247 5B
303 2598 1768 (as new instruments and higher-frequency capabilities are commissioned, and will need continual review.) 1768 SB
gr
3 52 295 2598 B
1 F
n
3 52 2103 2598 B
1 F
n
gs 2394 2720 0 247 CB
303 2648 1699 (In all cases, these thresholds should be explicitly "fuzzy", i.e. the policy should make it clear that the) 1699 SB
gr
3 52 295 2648 B
1 F
n
3 52 2103 2648 B
1 F
n
gs 2394 2720 0 247 CB
303 2698 1717 (NRAO Director has the option to send some proposals below these thresholds for expanded "skeptical) 1717 SB
gr
3 52 295 2698 B
1 F

n
3 52 2103 2698 B
1 F
n
gs 2394 2720 0 247 CB
303 2748 140 (review".) 140 SB
gr
3 57 295 2748 B
1 F
n
3 57 2103 2748 B
1 F
n
1811 3 295 2802 B
1 F
n
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32 0 0 50 50 0 0 0 46 /Times-Bold /font29 ANSIFont font
0 0 0 fC
gs 2394 2720 0 247 CB
303 263 1401 (4. Should Proposers be able to "Volunteer" for Skeptical Review?) 1401 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
303 431 1696 (Some 200-300 hour projects have already been done at the VLA and VLBA via series of consecutive) 1696 SB
gr
gs 2394 2720 0 247 CB
303 481 1739 (proposals for 100 or so hours. This approach provides a way to do moderate-sized projects through the) 1739 SB
gr
gs 2394 2720 0 247 CB
303 531 1783 (normal channels. We see no reason to discourage it. It amounts to an ongoing, but not guaranteed, grant) 1783 SB
gr
gs 2394 2720 0 247 CB
303 581 1675 (of observing time on the basis of demonstrable progress, with the review time scale being set by the) 1675 SB
gr
gs 2394 2720 0 247 CB
303 631 893 (proposers' success with, and capacity for, the project.) 893 SB
gr
gs 2394 2720 0 247 CB
303 731 1681 (This approach may not be well-suited to all moderate-sized projects, however. Data subsets or pilot) 1681 SB
gr
gs 2394 2720 0 247 CB
303 781 1621 (projects do not always produce good science. Doing a moderate-sized project piecemeal so as to) 1621 SB
gr
gs 2394 2720 0 247 CB
303 831 1696 (maximize short-term "excitement" at proposal deadlines may distort its overall

strategy. Some VLA) 1696 SB
gr
gs 2394 2720 0 247 CB
303 881 1786 (observations of source samples that interest a wide community have been fragmented into small proposals) 1786 SB
gr
gs 2394 2720 0 247 CB
303 931 1699 (carried out by different groups. The resulting loss of homogeneity limits the long-term benefit to the) 1699 SB
gr
gs 2394 2720 0 247 CB
303 981 1771 (community, which would be better served by the data produced by a small number of moderate-sized and) 1771 SB
gr
gs 2394 2720 0 247 CB
303 1031 1767 (well-coordinated proposals rather than a large number of small, independent ones. \(VLA observations of) 1767 SB
gr
gs 2394 2720 0 247 CB
303 1081 1766 (the 3CR continuum sources, and of galactic water vapor masers are particular examples of this known to) 1766 SB
gr
gs 2394 2720 0 247 CB
303 1131 62 (us.\)) 62 SB
gr
gs 2394 2720 0 247 CB
303 1231 1749 (The "volunteer" mechanism may also be appropriate for proposals that require coordinated observing at) 1749 SB
gr
gs 2394 2720 0 247 CB
303 1281 1787 (several telescopes. A "skeptical review" committee might be better able to evaluate the whole plan, rather) 1787 SB
gr
gs 2394 2720 0 247 CB
303 1331 1769 (than leaving each part for independent \(un-coordinated\) review through different channels in the normal) 1769 SB
gr
gs 2394 2720 0 247 CB
303 1381 290 (proposal process.) 290 SB
gr
gs 2394 2720 0 247 CB
303 1481 1768 (We therefore see some merit in inviting proposers to volunteer projects of moderate size \(100-300 hours\)) 1768 SB
gr
gs 2394 2720 0 247 CB
303 1531 1729 (for the enhanced "skeptical review". This might be a way for a proposer to ensure that moderate-sized) 1729 SB
gr
gs 2394 2720 0 247 CB
303 1581 1737 (proposals obtain all the time that they need \(regardless of graduate student involvement or the status of) 1737 SB
gr
gs 2394 2720 0 247 CB
303 1631 1737 (intermediate results\). It might also encourage attempts to produce more homogeneous, moderate-sized) 1737 SB

gr
gs 2394 2720 0 247 CB
303 1681 1791 (databases that would benefit a wider community. Success in such proposals wou
d also allow proposers to) 1791 SB
gr
gs 2394 2720 0 247 CB
303 1731 1758 (marshal resources \(staff, computer resources, funding, etc.\) better for
moderate-sized projects, simply by) 1758 SB
gr
gs 2394 2720 0 247 CB
303 1781 1677 (clarifying that all of the requested observing time would be granted \(the current
"will be considered) 1677 SB
gr
gs 2394 2720 0 247 CB
303 1831 1750 (further" status at the VLA leaves some uncertainties hanging over proposals in
the present queue.\) The) 1750 SB
gr
gs 2394 2720 0 247 CB
303 1881 1707 (fact that a proposal had successfully passed a more demanding skeptical review
process at the NRAO) 1707 SB
gr
gs 2394 2720 0 247 CB
303 1931 846 (could make it more attractive to funding agencies.) 846 SB
gr
gs 2394 2720 0 247 CB
303 2031 1795 (PI's will therefore have some incentives to "volunteer" for extra review, and it
seems advantageous to offer) 1795 SB
gr
gs 2394 2720 0 247 CB
303 2081 1766 (this possibility as an option. We should however aim for a situation wherein only
a small minority of all) 1766 SB
gr
gs 2394 2720 0 247 CB
303 2131 1695 (proposals goes for "skeptical review". This goal could be reached by holding
proposals that undergo) 1695 SB
gr
gs 2394 2720 0 247 CB
303 2181 1740 (skeptical review to a significantly higher standard, in recognition of the greater
long-term commitment) 1740 SB
gr
gs 2394 2720 0 247 CB
303 2231 1791 (that would be made to successful ones. \(This has happened with the "key
projects" category at the KPNO,) 1791 SB
gr
gs 2394 2720 0 247 CB
303 2281 541 (where the success rate is small.\)) 541 SB
gr
32 0 0 42 42 0 0 0 39 /Times-Bold /font29 ANSIFont font
gs 2394 2720 0 247 CB
303 2489 1100 (RECOMMENDATION 4: Volunteering for Skeptical Review) 1100 SB
gr
0 0 0 fC
/fm 256 def
1811 3 295 2481 B
1 F

n
3 60 295 2481 B
1 F
n
3 60 2103 2481 B
1 F
n
3 52 295 2539 B
1 F
n
3 52 2103 2539 B
1 F
n
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
303 2589 1698 (Proposers of "moderate-sized" \(below-threshold\) projects may also volunteer for expanded "skeptical) 1698 SB
gr
3 52 295 2589 B
1 F
n
3 52 2103 2589 B
1 F
n
gs 2394 2720 0 247 CB
303 2639 1743 (review" of their proposals. This option provides a way to obtain a stronger guarantee of observing time) 1743 SB
gr
3 52 295 2639 B
1 F
n
3 52 2103 2639 B
1 F
n
gs 2394 2720 0 247 CB
303 2689 1704 (for moderate-sized projects whose science could clearly be advanced by receiving such guarantees, in) 1704 SB
gr
3 52 295 2689 B
1 F
n
3 52 2103 2689 B
1 F
n
gs 2394 2720 0 247 CB
303 2739 1702 (return for submitting them to a more demanding initial review. We emphasize that we see this as an) 1702 SB
gr
3 52 295 2739 B
1 F
n
3 52 2103 2739 B
1 F
n
gs 2394 2720 0 247 CB

303 2789 1740 (option to be used rarely, and only in exceptional cases where the science would suffer if the project was) 1740 SB
gr
3 52 295 2789 B
1 F
n
3 52 2103 2789 B
1 F
n
gs 2394 2720 0 247 CB
303 2839 901 (done piecemeal through the regular proposal process.) 901 SB
gr
3 57 295 2839 B
1 F
n
3 57 2103 2839 B
1 F
n
1811 3 295 2893 B
1 F
n
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32 0 0 50 50 0 0 0 46 /Times-Bold /font29 ANSIFont font
0 0 0 fC
gs 2394 2720 0 247 CB
303 263 1264 (5. "Expert Review" - Ongoing Monitoring and Supervision) 1264 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
303 381 1762 (Some, but not necessarily all, large projects, may need further review by more a narrowly-focused expert) 1762 SB
gr
gs 2394 2720 0 247 CB
303 431 541 (panel before they are scheduled.) 541 SB
gr
gs 2394 2720 0 247 CB
303 531 1770 (The impact of large proposals on other NRAO users requires us to ensure that their observing techniques) 1770 SB
gr
gs 2394 2720 0 247 CB
303 581 1718 (and time allocations are optimized both to the science and to the telescope involved, and that the final) 1718 SB
gr
gs 2394 2720 0 247 CB
303 631 1229 (databases are made available promptly and in scientifically robust forms.) 1229 SB
gr
gs 2394 2720 0 247 CB
303 731 1684 (The main areas in which further expert review may be appropriate before a project is scheduled are:) 1684 SB
gr
gs 2394 2720 0 247 CB
303 831 1752 (a\) "Up front" scientific issues: sample definition and selection, sensitivity limits,

extent of sky coverage.) 1752 SB
gr
gs 2394 2720 0 247 CB
303 881 1737 (These are areas where it is appropriate to show that some consensus has been achieved , or at least that) 1737 SB
gr
gs 2394 2720 0 247 CB
303 931 1766 (advice has been obtained, from across the astronomical sub-discipline most concerned with the proposal.) 1766 SB
gr
gs 2394 2720 0 247 CB
303 1031 1647 (b\) "Up front" technical issues: optimal data acquisition strategies, organization of observing time,) 1647 SB
gr
gs 2394 2720 0 247 CB
303 1081 1684 (instrumental limitations or other on-line issues which may have a strong engineering or operational) 1684 SB
gr
gs 2394 2720 0 247 CB
303 1131 1722 (component. In some cases, it may be important to require a pilot or demonstration project to prove an) 1722 SB
gr
gs 2394 2720 0 247 CB
303 1181 1763 (observational technique before going ahead with the project as initially proposed. This area may require) 1763 SB
gr
gs 2394 2720 0 247 CB
303 1231 1630 (review by a group that involves scientists, engineers familiar with the instruments, and telescope) 1630 SB
gr
gs 2394 2720 0 247 CB
303 1281 270 (operations staff.) 270 SB
gr
gs 2394 2720 0 247 CB
303 1381 1499 (Ongoing review of a project after it has been started may also be appropriate, to monitor:) 1499 SB
gr
gs 2394 2720 0 247 CB
303 1481 1705 (a\) Data-processing progress: ongoing review may be particularly appropriate for projects whose data) 1705 SB
gr
gs 2394 2720 0 247 CB
303 1531 1688 (volume presents a major computing challenge. If such review is required, the supervision should be) 1688 SB
gr
gs 2394 2720 0 247 CB
303 1581 1595 ("strong". By this we mean that the review panel must be able to recommend withholding later) 1595 SB
gr
gs 2394 2720 0 247 CB
303 1631 1741 (installments of observing time if the project does not meet data-processing targets \(quality and speed of) 1741 SB
gr
gs 2394 2720 0 247 CB
303 1681 1787 (the data analysis\) in a timely way. Such a panel will in effect re-referee the

project while it is in progress,) 1787 SB
gr
gs 2394 2720 0 247 CB
303 1731 1682 (and could recommend no further time allocation if agreed data-processing milestones were not met.) 1682 SB
gr
gs 2394 2720 0 247 CB
303 1831 1795 (b\) Construction of an accessible public repository for data products. If a big community's observing time is) 1795 SB
gr
gs 2394 2720 0 247 CB
303 1881 1737 ("taxed" to make room for large projects, then that community should expect to share the benefits of the) 1737 SB
gr
gs 2394 2720 0 247 CB
303 1931 1765 (final database quickly. This implies a review process aimed at ensuring prompt access to calibrated data) 1765 SB
gr
gs 2394 2720 0 247 CB
303 1981 1726 (whose quality are uniform and well-understood. It also requires that large proposals clearly state their) 1726 SB
gr
gs 2394 2720 0 247 CB
303 2031 1732 (plans for public access to the data \(and the nature of the proposed data products\) in order to be sent for) 1732 SB
gr
gs 2394 2720 0 247 CB
303 2081 1795 (skeptical review. If ongoing "expert" review of the data products is required, it would typically be done by) 1795 SB
gr
gs 2394 2720 0 247 CB
303 2131 938 (a panel with a mix of scientific and computer expertise.) 938 SB
gr
gs 2394 2720 0 247 CB
303 2231 1722 (To the extent that any of these issues apply to a particular large proposal, they imply review by groups) 1722 SB
gr
gs 2394 2720 0 247 CB
303 2281 1713 (different in composition from the initial "skeptical review" panel. Unlike this panel, which should be) 1713 SB
gr
gs 2394 2720 0 247 CB
303 2331 1762 (cross-disciplinary and is probably best drawn from the existing \(external to NRAO\) referee pool, "expert) 1762 SB
gr
gs 2394 2720 0 247 CB
303 2381 1742 (review" panels would benefit by including people who are not currently acting as NRAO referees. They) 1742 SB
gr
gs 2394 2720 0 247 CB
303 2431 1794 (could include NRAO scientific and technical staff with special knowledge about the telescope, the science,) 1794 SB
gr
gs 2394 2720 0 247 CB
303 2481 1777 (or data processing relevant to the proposal. Some would need to be ongoing.

These might use a range of) 1777 SB
gr
gs 2394 2720 0 247 CB
303 2531 1745 (formats, including telephone conferences, face-to-face meetings or workshops, that are not traditionally) 1745 SB
gr
gs 2394 2720 0 247 CB
303 2581 715 (used for proposal refereeing at the NRAO.) 715 SB
gr
gs 2394 2720 0 247 CB
303 2681 1700 (We emphasize that not all "large" projects should need exposure to all of the above forms of ongoing) 1700 SB
gr
gs 2394 2720 0 247 CB
303 2731 1739 (monitoring and supervision. It is likely that all projects above some very large \(1000-hour ?\) threshold) 1739 SB
gr
gs 2394 2720 0 247 CB
303 2781 1787 (should have some ongoing supervision by an ad hoc "expert panel". But length of observing time alone is) 1787 SB
gr
gs 2394 2720 0 247 CB
303 2831 1788 (not the only criterion for whether ongoing expert review is necessary. The technical "degree of difficulty") 1788 SB
gr
gs 2394 2720 0 247 CB
303 2881 1781 (of the project is clearly significant. For example, proposals that are straightforward in terms of observing) 1781 SB
gr
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gs 2394 2720 0 247 CB
303 263 1736 (technique and data analysis, but which require 'simply' large amounts of time, might be selected on the) 1736 SB
gr
gs 2394 2720 0 247 CB
303 313 1720 (basis of a favorable evaluation of the skeptical review committee. But a proposal which challenges the) 1720 SB
gr
gs 2394 2720 0 247 CB
303 363 1748 (current technical frontier \(Zeeman work on the GBT, a dramatic new pulsar search strategy\) and which) 1748 SB
gr
gs 2394 2720 0 247 CB
303 413 1620 (requires an extensive block of time should surely be reviewed by a group with a strong technical) 1620 SB
gr
gs 2394 2720 0 247 CB
303 463 606 (background before being scheduled.) 606 SB
gr
gs 2394 2720 0 247 CB

303 563 1692 (It is important that contentious areas, e.g. "research" issues about data processing, etc. should not be) 1692 SB
gr
gs 2394 2720 0 247 CB
303 613 1693 (allowed to stymie progress on a proposal. Issues such as timely completion and accessible archiving) 1693 SB
gr
gs 2394 2720 0 247 CB
303 663 1085 (of the data will be important for many large proposals, however.) 1085 SB
gr
gs 2394 2720 0 247 CB
303 763 1774 (The heart of the issue here is that the style and extent of any ongoing supervision of large projects should) 1774 SB
gr
gs 2394 2720 0 247 CB
303 813 1676 (be determined on a case-by-case basis. Any policy that is written down now should simply define a) 1676 SB
gr
gs 2394 2720 0 247 CB
303 863 1773 (process that is flexible enough to make this case-by-case determination. It should not try to anticipate all) 1773 SB
gr
gs 2394 2720 0 247 CB
303 913 1454 (of the possible supervisory issues in advance \(though we have pointed to a few above\).) 1454 SB
gr
gs 2394 2720 0 247 CB
303 1013 1795 (We therefore suggest that when a "skeptical review" panel for a proposal assigns it high scientific priority,) 1795 SB
gr
gs 2394 2720 0 247 CB
303 1063 1766 (they should also recommend whether the proposal should be subject to further expert review, and if so in) 1766 SB
gr
gs 2394 2720 0 247 CB
303 1113 1750 (what areas. The scope and style of any further review process should however be decided by the NRAO) 1750 SB
gr
gs 2394 2720 0 247 CB
303 1163 1783 (Director. with advice from any other appropriate sources. It is important that the process begin with input) 1783 SB
gr
gs 2394 2720 0 247 CB
303 1213 1683 (from representatives of the whole astronomical community served by the telescope involved, but the) 1683 SB
gr
gs 2394 2720 0 247 CB
303 1263 1760 ("skeptical reviet" panel should neither be expected to, or expect to, specify the entire subsequent review) 1760 SB
gr
gs 2394 2720 0 247 CB
303 1313 135 (process.) 135 SB
gr
gs 2394 2720 0 247 CB
303 1413 1731 (\(We note parenthetically that in discussing this area, we were guided by the

recent experience with the) 1731 SB
gr
gs 2394 2720 0 247 CB
303 1463 1728 (two VLA surveys. We understand that there were significant technical issues that had to be settled for) 1728 SB
gr
gs 2394 2720 0 247 CB
303 1513 1759 (each of the surveys, primarily in the area of data analysis. We also believe that the community relied on) 1759 SB
gr
gs 2394 2720 0 247 CB
303 1563 1733 (the survey oversight committee\(s\) to ensure that the data were made readily available to the public in a) 1733 SB
gr
gs 2394 2720 0 247 CB
303 1613 1726 (timely manner. Perhaps this would have occurred anyway, but we believe that it was helpful to have a) 1726 SB
gr
gs 2394 2720 0 247 CB
303 1663 969 (mechanism in place to strengthen the resolve of the PI's!\)) 969 SB
gr
32 0 0 42 42 0 0 0 39 /Times-Bold /font29 ANSIFont font
gs 2394 2720 0 247 CB
303 1921 957 (RECOMMENDATION 5: Ongoing "Expert" Review) 957 SB
gr
0 0 0 fC
/fm 256 def
1811 3 295 1913 B
1 F
n
3 60 295 1913 B
1 F
n
3 60 2103 1913 B
1 F
n
3 52 295 1971 B
1 F
n
3 52 2103 1971 B
1 F
n
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
303 2021 1670 (The skeptical review panel for a large proposal should also advise the NRAO Director whether any) 1670 SB
gr
3 52 295 2021 B
1 F
n
3 52 2103 2021 B
1 F
n
gs 2394 2720 0 247 CB
303 2071 1151 (further "expert" review of the proposal is needed in four main areas:) 1151 SB

gr
3 52 295 2071 B
1 F
n
3 52 2103 2071 B
1 F
n
3 52 295 2121 B
1 F
n
3 52 2103 2121 B
1 F
n
gs 2394 2720 0 247 CB
453 2171 636 (scientific issues of observing strategy,) 636 SB
gr
32 0 0 42 42 0 0 0 42 /Symbol font
gs 2394 2720 0 247 CB
303 2171 19 (\267) 19 SB
gr
3 52 295 2171 B
1 F
n
3 52 2103 2171 B
1 F
n
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
453 2221 987 (technical issues of observing strategy and data acquisition,) 987 SB
gr
32 0 0 42 42 0 0 0 42 /Symbol font
gs 2394 2720 0 247 CB
303 2221 19 (\267) 19 SB
gr
3 52 295 2221 B
1 F
n
3 52 2103 2221 B
1 F
n
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
453 2271 679 (ongoing review of project progress, and,) 679 SB
gr
32 0 0 42 42 0 0 0 42 /Symbol font
gs 2394 2720 0 247 CB
303 2271 19 (\267) 19 SB
gr
3 52 295 2271 B
1 F
n
3 52 2103 2271 B
1 F
n
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font

gs 2394 2720 0 247 CB
453 2321 658 (public availability of the data products.) 658 SB
gr
32 0 0 42 42 0 0 0 42 /Symbol font
gs 2394 2720 0 247 CB
303 2321 19 (\267) 19 SB
gr
3 52 295 2321 B
1 F
n
3 52 2103 2321 B
1 F
n
3 52 295 2371 B
1 F
n
3 52 2103 2371 B
1 F
n
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
303 2421 1771 (Not all large proposals will require further review in all of these areas, and many may not require further) 1771 SB
gr
3 52 295 2421 B
1 F
n
3 52 2103 2421 B
1 F
n
gs 2394 2720 0 247 CB
303 2471 1714 (review at all. If a highly-rated large proposal is of sufficient scope or technical complexity to warrant) 1714 SB
gr
3 52 295 2471 B
1 F
n
3 52 2103 2471 B
1 F
n
gs 2394 2720 0 247 CB
303 2521 1725 (ongoing review, the NRAO should make every effort to achieve this without over-burdening either the) 1725 SB
gr
3 52 295 2521 B
1 F
n
3 52 2103 2521 B
1 F
n
gs 2394 2720 0 247 CB
303 2571 1791 (proposers or the expert referees. The arrangements for any ongoing "expert review" would be made at the) 1791 SB
gr
3 52 295 2571 B

1 F
n
3 52 2103 2571 B
1 F
n
gs 2394 2720 0 247 CB
303 2621 960 (discretion of the NRAO Director on a case-by-case basis.) 960 SB
gr
3 57 295 2621 B
1 F
n
3 57 2103 2621 B
1 F
n
1811 3 295 2675 B
1 F
n
EJ RS
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0 0 25 11 798 1100 300 SM
32 0 0 50 50 0 0 0 46 /Times-Bold /font29 ANSIFont font
0 0 0 fC
gs 2394 2720 0 247 CB
303 263 1766 (6. Should an Over-all Upper Limit be set to the Time Available for Large Projects?)
1766 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
303 381 1675 (There must be some upper limit, or we could have a situation where all the time
goes to a few large) 1675 SB
gr
gs 2394 2720 0 247 CB
303 431 1537 (projects -- an inappropriate asymptote for a national facility with a large, diverse
user base.) 1537 SB
gr
gs 2394 2720 0 247 CB
303 531 1742 (The limits should be expected to vary from telescope to telescope, and with time
at any given telescope,) 1742 SB
gr
gs 2394 2720
247 CB
303 581 1770 (just as the overall proposal pressures vary in response to major changes in
instrumentation, to discipline-) 1770 SB
gr
gs 2394 2720 0 247 CB
303 631 1675 (wide shifts in astronomical emphasis, or to astronomical transients such as
supernovae and comets.) 1675 SB
gr
gs 2394 2720 0 247 CB
303 731 1771 (In general, we feel that while the over-subscription rate on a telescope remains
under 2:1, the question of) 1771 SB
gr
gs 2394 2720 0 247 CB
303 781 1729 (exactly how upper limits are set for large proposals may not be too pressing. But

if a large proposal or) 1729 SB
gr
gs 2394 2720 0 247 CB
303 831 1761 (proposals raise the over-subscription rate much over 2:1, their effects would likely be noticeable across a) 1761 SB
gr
gs 2394 2720 0 247 CB
303 881 1221 (broad community, and the upper-limit question would be more pressing.) 1221 SB
gr
gs 2394 2720 0 247 CB
303 981 1682 (For the more heavily over-subscribed facilities such as the VLA, VLBA, and GBT \(presumably\) the) 1682 SB
gr
gs 2394 2720 0 247 CB
303 1031 1762 (appropriate upper limits would be below those appropriate for instruments such as the former 300-ft, the) 1762 SB
gr
gs 2394 2720 0 247 CB
303 1081 1680 (140-ft and the Green Bank interferometer in the years before their shutdown. In the later years of a) 1680 SB
gr
gs 2394 2720 0 247 CB
303 1131 1736 (telescope's operation, doing large-scale surveys becomes attractive for operational, as well as scientific,) 1736 SB
gr
gs 2394 2720 0 247 CB
303 1181 1781 (reasons. \(Simplifying telescope schedules and minimizing equipment changes are often good operational) 1781 SB
gr
gs 2394 2720 0 247 CB
303 1231 473 (strategies as a facility ages\).) 473 SB
gr
gs 2394 2720 0 247 CB
303 1331 1775 (Within this committee, our thresholds for discomfort about large proposals displacing smaller ones on an) 1775 SB
gr
gs 2394 2720 0 247 CB
303 1381 1717 (instrument in the prime of its scientific life ranged from 1/6 to 1/3 of the total observing time. \(Large) 1717 SB
gr
gs 2394 2720 0 247 CB
303 1431 1716 (projects that require time in the most "popular" LST ranges for galactic and extragalactic work would) 1716 SB
gr
gs 2394 2720 0 247 CB
303 1481 1472 (obviously constrain other work more severely than those with intrinsic LST flexibility.\)) 1472 SB
gr
gs 2394 2720 0 247 CB
303 1581 1744 (We concluded however that it is probably inappropriate for us to go beyond this to assess general large-) 1744 SB
gr
gs 2394 2720 0 247 CB
303 1631 1747 (proposal upper limits for any particular telescope as part of this report. Instead, we wish to recommend) 1747 SB

gr
gs 2394 2720 0 247 CB
303 1681 1345 (how such an assessment should be obtained for any telescope when it is needed.) 1345 SB
gr
gs 2394 2720 0 247 CB
303 1781 1725 (In our opinion, the best group to assess this issue would be a cross-disciplinary panel of scientists with) 1725 SB
gr
gs 2394 2720 0 247 CB
303 1831 1702 (access to the statistics of observing time requests from, and an appraisal of the scientific vigor in, the) 1702 SB
gr
gs 2394 2720 0 247 CB
303 1881 1738 (different sub-disciplines that dominate the proposal demand at the telescope. This description matches) 1738 SB
gr
gs 2394 2720 0 247 CB
303 1931 1330 (that of the "cross-disciplinary" parts of our proposed "skeptical review" panels.) 1330 SB
gr
gs 2394 2720 0 247 CB
303 2031 1758 (We also believe that advice on upper limits to the observing time for large proposals will be needed only) 1758 SB
gr
gs 2394 2720 0 247 CB
303 2081 1720 (on the \(presumably rare\) occasions when more than one large proposal at a time is highly rated by the) 1720 SB
gr
gs 2394 2720 0 247 CB
303 2131 1747 (skeptical review panels for a given telescope. We therefore suggest that, on these occasions, the NRAO) 1747 SB
gr
gs 2394 2720 0 247 CB
303 2181 1569 (Director seek such advice from the cross-disciplinary cohort of those skeptical review panels.) 1569 SB
gr
gs 2394 2720 0 247 CB
303 2281 1781 (It is important that any upper limits that are established at such times not be re-interpreted later as quotas) 1781 SB
gr
gs 2394 2720 0 247 CB
303 2331 1742 (of time that "should" be filled by large proposals. High scientific priority based on reviewing proposals) 1742 SB
gr
gs 2394 2720 0 247 CB
303 2381 1742 (that were initiated on the "open market" by users should be the only driver for assigning time to a large) 1742 SB
gr
gs 2394 2720 0 247 CB
303 2431 775 (proposal in competition with smaller projects.) 775 SB
gr
32 0 0 42 42 0 0 0 39 /Times-Bold /font29 ANSIFont font
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303 2589 1412 (RECOMMENDATION 6: Upper Limits to the Total Time for Large Proposals) 1412

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gr
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1 F
n
3 60 295 2581 B
1 F
n
3 60 2103 2581 B
1 F
n
3 52 295 2639 B
1 F
n
3 52 2103 2639 B
1 F
n
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gs 2394 2720 0 247 CB
303 2689 38 (If) 39 SB
342 2689 129 (several) 130 SB
472 2689 96 (large) 97 SB
569 2689 171 (proposals) 172 SB
741 2689 59 (for) 60 SB
801 2689 30 (a) 31 SB
832 2689 104 (given) 105 SB
937 2689 164 (telescope) 165 SB
1102 2689 63 (are) 64 SB
1166 2689 119 (highly) 120 SB
1286 2689 96 (rated) 97 SB
1383 2689 50 (by) 51 SB
1434 2689 63 (the) 64 SB
1498 2689 160 (skeptical) 162 SB
1660 2689 123 (review) 125 SB
1785 2689 130 (panels,) 132 SB
1917 2689 63 (the) 65 SB
1982 2689 117 (NRAO) 117 SB
gr
3 52 295 2689 B
1 F
n
3 52 2103 2689 B
1 F
n
gs 2394 2720 0 247 CB
303 2739 1650 (Director should seek advice from a cross-disciplinary subset of the regular proposal referees about) 1650 SB
gr
3 52 295 2739 B
1 F
n
3 52 2103 2739 B
1 F

n
gs 2394 2720 0 247 CB
303 2789 107 (upper) 110 SB
413 2789 108 (limits) 111 SB
524 2789 43 (to) 46 SB
570 2789 63 (the) 66 SB
636 2789 142 (fraction) 145 SB
781 2789 44 (of) 48 SB
829 2789 54 (all) 58 SB
887 2789 175 (observing) 179 SB
1066 2789 86 (time) 90 SB
1156 2789 76 (that) 80 SB
1236 2789 123 (should) 127 SB
1363 2789 49 (be) 53 SB
1416 2789 141 (devoted) 145 SB
1561 2789 43 (to) 47 SB
1608 2789 107 (them.) 111 SB
1719 2789 11 ( ) 15 SB
1734 2789 82 (Any) 86 SB
1820 2789 113 (policy) 117 SB
1937 2789 162 (statement) 162 SB
gr
3 52 295 2789 B
1 F
n
3 52 2103 2789 B
1 F
n
gs 2394 2720 0 247 CB
303 2839 103 (about) 107 SB
410 2839 88 (such) 92 SB
502 2839 107 (upper) 111 SB
613 2839 108 (limits) 112 SB
725 2839 93 (must) 97 SB
822 2839 189 (emphasize) 193 SB
1015 2839 82 (they) 87 SB
1102 2839 76 (will) 81 SB
1183 2839 65 (not) 70 SB
1253 2839 49 (be) 54 SB
1307 2839 195 (interpreted) 200 SB
1507 2839 46 (as) 51 SB
1558 2839 154 ("quotas") 159 SB
1717 2839 43 (to) 48 SB
1765 2839 49 (be) 54 SB
1819 2839 99 (filled) 104 SB
1923 2839 86 (with) 91 SB
2014 2839 85 (large) 85 SB
gr
3 52 295 2839 B
1 F
n
3 52 2103 2839 B
1 F
n
gs 2394 2720 0 247 CB

303 2889 306 (projects, however.) 306 SB
gr
3 57 295 2889 B
1 F
n
3 57 2103 2889 B
1 F
n
1811 3 295 2943 B
1 F
n
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gs 2394 2720 0 247 CB
303 263 732 (7. Announcements of Opportunity) 732 SB
gr
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
303 372 1717 (The committee considered whether the NRAO should explicitly solicit proposals for large projects via) 1717 SB
gr
gs 2394 2720 0 247 CB
303 422 1757 (Announcements of Opportunity, targeted either to specific disciplines or to special deadlines \(other than) 1757 SB
gr
gs 2394 2720 0 247 CB
303 472 642 (those of the regular proposal process.\)) 642 SB
gr
gs 2394 2720 0 247 CB
303 572 1033 (It was our unanimous opinion that this would be undesirable.) 1033 SB
gr
gs 2394 2720 0 247 CB
303 672 1768 (It would separate "opportunities" for proposing large projects from the regular proposal process, whereas) 1768 SB
gr
gs 2394 2720 0 247 CB
303 722 1731 (we see merit in keeping the processes for large and small proposals well-coupled. It is also hard to see) 1731 SB
gr
gs 2394 2720 0 247 CB
303 772 1662 (what benefit would come by encouraging the whole user community to think about large proposals) 1662 SB
gr
gs 2394 2720 0 247 CB
303 822 264 (simultaneously.) 264 SB
gr
gs 2394 2720 0 247 CB
303 922 1713 (The NRAO-operated telescopes are ground-based and flexible in their capabilities, so operational and) 1713 SB
gr
gs 2394 2720 0 247 CB

303 972 1794 (planning considerations differ greatly from those needed to establish the scientific program of space-borne) 1794 SB
gr
gs 2394 2720 0 247 CB
303 1022 1690 (instruments, for example. The AO approach would however place some obligation on the NRAO to) 1690 SB
gr
gs 2394 2720 0 247 CB
303 1072 1791 (schedule some large projects after a period in which it had encouraged the whole user community to make) 1791 SB
gr
gs 2394 2720 0 247 CB
303 1122 326 (proposals for them.) 326 SB
gr
gs 2394 2720 0 247 CB
303 1222 1759 (It is particularly undesirable to create an artificial imbalance between the pressures for large and regular) 1759 SB
gr
gs 2394 2720 0 247 CB
303 1272 1793 (proposals when our ultimate goal is to find an appropriate balance. We believe that balance is more likely) 1793 SB
gr
gs 2394 2720 0 247 CB
303 1322 1722 (to be achieved through a proposal process that is driven mainly by the scientific interests of individual) 1722 SB
gr
gs 2394 2720 0 247 CB
303 1372 999 (investigators, than through one driven by ad hoc deadlines.) 999 SB
gr
32 0 0 42 42 0 0 0 39 /Times-Bold /font29 ANSIFont font
gs 2394 2720 0 247 CB
303 1580 1048 (RECOMMENDATION 7: Announcements of Opportunity) 1048 SB
gr
0 0 0 fC
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1811 3 295 1572 B
1 F
n
3 60 295 1572 B
1 F
n
3 60 2103 1572 B
1 F
n
3 52 295 1630 B
1 F
n
3 52 2103 1630 B
1 F
n
32 0 0 42 42 0 0 0 38 /Times-Roman /font32 ANSIFont font
gs 2394 2720 0 247 CB
303 1680 1792 (The NRAO should not make Announcements of Opportunity for the submission of large proposals. Large) 1792 SB
gr

3 52 295 1680 B
1 F
n
3 52 2103 1680 B
1 F
n
gs 2394 2720 0 247 CB
303 1730 1658 (proposals should be submitted at the normal proposal deadlines, without special solicitation by the) 1658 SB
gr
3 52 295 1730 B
1 F
n
3 52 2103 1730 B
1 F
n
gs 2394 2720 0 247 CB
303 1780 205 (observatory.) 205 SB
gr
3 57 295 1780 B
1 F
n
3 57 2103 1780 B
1 F
n
1811 3 295 1834 B
1 F
n
EJ RS
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%%+ font Times-Roman

%%EOF

From: pvandenb@NRAO.EDU (Paul Vanden Bout)
To: abridle@polaris.cv.nrao.edu
Subject: Email addresses
Date: Fri, 31 Jan 97 09:53:27 EST

Do you have a file of email addresses for the big projects committee?

From: churchwell@madraf.astro.wisc.edu
To: abridle@NRAO.EDU
Subject: RE: NRAO Large Proposals Committee
Date: Wed, 29 Jan 1997 14:00:40 EST

Dear Allen,

I just returned from 2 weeks in Europe and read your emails regarding the large program report. I have no objection with including the bullet suggested by Paul. I also think it is better not to specify a specific duration for long term programs. It is better to let the nature of the project determine this. I therefore would be in favor of leaving the wording as it is.

Best, Ed

From: churchwell@madraf.astro.wisc.edu
To: abridle@NRAO.EDU
Subject: RE: NRAO Large Proposals Committee
Date: Wed, 29 Jan 1997 14:11:38 EST

Alan,
I just read your comments regarding Don's concerns. That looks like a legitimate concern and I expect that a few sentences regarding it might be appropriate.
Ed

From: abridle (Alan Bridle)
To: churchwell@madraf.astro.wisc.edu
Subject: RE: NRAO Large Proposals Committee
Date: Wed, 29 Jan 1997 15:26:45 -0500

Hi Ed,

The report has now gone to Paul in the form of the last Postscript version, except that I added page numbering as well and corrected a couple of small typos. If you'd like a .ps file or paper copy of the _absolutely_ final version, just let me know.

A.

From: Alan Bridle <abridle@NRAO.EDU>
To: pvandenb@NRAO.EDU (Paul Vanden Bout)
Subject: Re: Email addresses
Date: Fri, 31 Jan 1997 14:42:19 -0500

Paul Vanden Bout writes:
 >
 > do you have a file of email addresses for the big projects committee?

dbacker@astro.berkeley.edu,
churchwell@madraf.astro.wisc.edu,
haynes@astrosun.tn.cornell.edu,
jhewitt@mit.edu,
dhogg@nrao.edu,
kyl@sgr.astro.uiuc.edu,
abridle@nrao.edu

From: Paul Vanden Bout <pvandenb@nrao.edu>
To: "Backer, Don" <dbacker@astron.Berkeley.EDU>,
"Bridle, Alan" <abridle@polaris.cv.nrao.edu>,
"Churchwell, Ed" <churchwell@madraf.astro.wisc.edu>,
"Haynes, Martha" <haynes@astrosun.tn.cornell.edu>,
"Hewitt, Jacqueline" <jhewitt@mit.edu>,
"Hogg, David" <dhogg@polaris.cv.nrao.edu>,
"Lo, K.-Y." <kyl@sgr.astro.uiuc.edu>
Subject: Thanks for the Report
Date: Fri, 14 Feb 1997 15:17:19 -0500

Dear Colleagues:

I want to thank you for the time and effort that went into the report you have prepared on policies for dealing with unusally large observing proposals. I think this is exactly what is needed. Your report has been sent to the site directors for comment and will be shared soon with the Observatory staff. Following the upcoming meetings of the Visiting Committee and Users Committee it will be published in the Newsletter as policy.

Again, thank you for an excellent job.

Paul