From: Darrel Emerson <demerson@tuc.nrao.edu>
To: Richard Simon <rsimon@bass.tuc.nrao.edu>
Cc: abridle@bass.tuc.nrao.edu
Subject: Y2K compliance (fwd)
Date: Mon, 20 Oct 1997 13:10:13 –0700 (MST)

Hi Richard,
   As promised, here is an update on Y2K checkouts in Tucson.
As you see, if we'd had the "Option 30" add-on for our Spectracom clock,
we could have had a problem. As it is, our clock will be ok. We already
have a Sun OS 4 workaround in our system, dating back to pre-Solaris.
This workaround is only valid until the year 2090 (see following message)
but we think we can fix that in time.

        Please feel free to forward this to others who may gain from
our experience.
                Cheers,
                      Darrel.

---------- Forwarded message ----------
Date: Mon, 20 Oct 1997 10:45:00 -0700 (MST)
From: Robert Freund <rfreund@bass.tuc.nrao.edu>
To: demerson@tuc.nrao.edu
Cc: tfolkers@tuc.nrao.edu
Subject: Y2K compliance

Date formats of the WWVB and IRIG-B protocols were checked for Y2K compliance.
Neither format incorporates year information. The various dedicated VME
controllers in the control system use IRIG-B signals for their master timing
and synchronization. These are derived from WWVB transmissions by a receiver
and synchronized clock combination.

An option for the Spectracom Model 8171A WWVB synchronized clock does provide
year information in a non-Y2K compliant format. We do not use this mode
nor have this option.

The VME controllers in the control system obtain date information from the
controlling SUN computer as 2 ASCII characters. The two digit year format was
a feature of old SUNOS and has been replaced in SOLARIS with a 4 digit format.
The vxWorks software currently applies a year 2000 correction. Since
SOLARIS supplies 'date' information in a 4 digit format, the vxWorks work-
around will be shortly eliminated with full 4 digit true Y2K compliant code.

RWFreund
TWFolkers

From: Darrel Emerson <demerson@tuc.nrao.edu>
To: Richard Simon <rsimon@bass.tuc.nrao.edu>
Cc: abridle@bass.tuc.nrao.edu
Subject: More Y2K work in Tucson
Date: Mon, 20 Oct 1997 13:21:19 –0700 (MST)

Richard, here is an update that Jeff Hagen has just sent me on Y2K checkouts. We think we're on top on most things. A personal worry I have is with anything lurking within VxWorks; I'm assured that there isn't anything there that could give us problems, but we won't know for sure until we try it. We plan more testing (e.g. fooling the system clock into thinking it's the next century) and would be grateful for any more information you can give us from the experience at other sites.

As you see from the list below, we are relying on other sites to help out by thoroughly checking our common systems like the Solaris OS.

Regards,
Darrel.

---------- Forwarded message ----------
Date: Fri, 17 Oct 1997 16:27:52 -0700 (MST)
From: Jeff Hagen <jhagen@bass.tuc.nrao.edu>
To: demerson@bass.tuc.nrao.edu
Subject: y2k

Here is an assessment of the y2k impact for Tucson.

As I see it there are two cases:

- the realtime operation of the twelve meter. We could lose important observing time if there is a y2k bug.

- productivity of the staff. Our engineers and scientists could be held up from work if the computer system was down for some time.

The twelve meter time issues.

- OS release. I'm sure Richard will have somebody try setting the date ahead on Solaris. Linux works.

- the spectracom clocks / irig system don't even know about the year. We find out the two digit year from the unix system, "date -u "+%y" I must chuckle. I wrote it. Here is the code:

```
year = atoi( buf );
if( year < 90 )
  year = 2000 + year;
else
  year = 1900 + year;
```

So I have till 2090 to fix it. (The completion date of the GBT.)

- The ephemeris generation program handles the year 2000 just fine. I tried it. We should double check the astronomical almanac for the year 2000 for the planet positions.

- Other issues, like the power system, various embedded components. How can we know what might break? Most things that use a date allow you to set it. We can always set it back. If you can think of any

specific examples, tell us.

Considering these issues, I think the twelve meter will handle the y2k just fine.

Productivity issues.

- The internet may crash or get slow. So? Pick up the telephone.
- The phone system may crash. Set the date back to 1999.
- Some commercial software package may fail.
  Set the computer date back to 1999.
- Analysis/Data reduction. Richard had already identified a problem in AIPS and a fix is in the works. FITS too. I got the impression Richard was on top of this one.