

300 Foot 25th birthday symposium 25-26 September 1987.

Audio recordings -- notes

- 01 - Introduction by George Seielstad (4 min)
- 02 - Jerry Tape : AUI and the 300 Foot. (23 min)
- 03 - Dave Heeschen : The 300 Foot and the National Center Concept
(32 min)
first visitor program was Burke and Turner on the Hydrogen line - they brought their own receiver.
Discussion re Merle Tuve's influence;
Menon on attitudes - universities with and without radio telescopes.
- 04 - John Findlay : A telescope in 700 days. (34 min)
Discussion - "it looks right".

(coffee break)
- 05 - Ed McClain : A view from the outside. (27 min)
Discussion - Westerhaut, Findlay, design of fully steerable 300-foot which became Sugar Grove 100 foot. Committee to use 600-foot.
- 06 - Mike Davis : the re-surfacing. (20 min)
Discussion - cost of re-surfacing; it always pays off.
Davis: terror in re-calibrating half-finished dish.
Sagging of original mesh - snow - jet engine;
Findlay, Hungerbuler; electric heating.
- 07 - Roger Norrod : receivers and technical progress (23 min)
discussion: confusion over V to F converters.
- 08 - Bob Vance : computer progress. (12 min)
From paper punch tape to PCs.
Discussion - old control room; storage of DDPs.

(break for lunch)
- 09 - Gert Westerhaut : movie of HI data cube. (26 min)
Discussion - Menon recalls doing first 100-lag fourier transform for the autocorrelator by hand.
Driving and flying GB to Maryland.
- 10 - Frank Kerr : early neutral hydrogen on two transit telescopes
(27 min)
Discussion - when 210 Foot was built; zone plates;
commissioning of 210 Foot, "Kerr's theorem", reception.
Burke's story about the governor general.

- 11 - Bob Brown : Absorption lines, quasars. (21 min)
300 foot better for absorption line observations.
Post Card.
- 12 - Bernie Burke : reminiscences, and the future. (35 min)
The record for driving GB to Washington.
- (break)
- 13 - Phil Bowers : first OH from a comet; galactic OH survey.
(8.5 min)
Philosophical talk : search for truth is like eating
an artichoke.
Broderick? :served artichokes at a party -- the hollandaise
was excellent, but nobody told me you had to cook the thing.
Burke: that's very appropriate because you always have to
cook your data.
- 14 - Don Backer : "a pulsar in CTB80", or "I found this preprint by
Richard Strom in the Janksy Lab". (36 min)
Including a lot of discussion following Backer's talk.
Just missing important discoveries.
T.Clark on "suitcase" observers.
- 15 - PhDiscussion : the discussion following Don's talk, starting with
Menon's question; (38 min)
T.Clarks story about early 300 foot VLBI with John Broderick
and Bill Erickson.
John Findlay, re criticism that the 300 foot couldn't see the galactic
center. -- it was a money saving decision. might have cost 10-15% more.
Gart and the north polar hole; hole dug by Fred Crews.
Frank Drake dug the south hole. Frank Kerr on trying out new line
equipment, finding bugs and Rick fixed them as fast as he could
find them.
Davis: 300 foot flexure with temperature gave some hour angle coverage.
Burke on digital systems.
Seielstad : lessons learned? 300 foot system flexible enough to be
used for studies not originally planned. Merle Kerr used to climb up
the feed legs everyday with a dewar of liquid nitrogen. He must have
been glad when cryogenic lines were installed.
Findlay : its a friendly telescope.
Seielstad : the observatory learned to be a national center, and the
attitude has propagated to the present day -- everyone still goes out
of their way to help the observers.
- (break for dinner)
- 16 - Gerrit Verschuur - How the 300 Foot changed my life. (22 min)
Early HI work. Stories. Driving bicycles into the dish.
- 17 - Two stories from John Findlay (3 min).

Trying to hit a ball into the dish with a 9-iron.
Joke about trying to find Lovell's house with Berkner and Ewen.

- 18 - Phil Gregory : The Galactic Plane Patrol (43 min).
Phil gave a birthday present. Gave it the John Findlay in behalf of the 300 Foot. It is a very nice picture. (but what picture is it?)
Question about how many of the variables are extra-galactic.
- 19 - Jim Condon : Continuum surveys with the 300 Foot (40 min).
History of extragalactic sky surveys that have been done with the 300 Foot.
Hoglund did the first surveys, drift scans at 750 and 1400 MHz.
John Findlay congratulates Jim for courage in driving the scope continually at 10 degrees per minute over the past 20 years.
Tom Clark recalls that about 1972-3 when one of these surveys was suggested, said, "you won't do that to my telescope!"
Discussion about worries about the survival of the telescope.
Someone mentioned that if the 300 foot fell down then we could build a 600-foot!
Davis: 300 Foot very precise positioning and very repeatable.
Condon: the faster you go the better the pointing accuracy.

(coffee break)

Seielstad: its always dangerous to make predictions, especially about the future.

VonHoerner quoting Freeman Dyson, "I am an optimist because the future is uncertain."

- 20 - von Hoerner : What about the next generation. (39 min).
Design principles for future telescopes.
Discussion included multi-beam arrays and phased arrays.
- 21 - Rick Fisher : The future (41 min). and discussion.
Quote from Dave Staelin : The true test of a great proposal is that it initially be rejected by competent peers. (but the converse is not true!)
Technical innovations to come: improvements of receivers come with a systems design problem including the receiver and antenna structure.
Aperture blockage is a limitation. Make receivers and dewars smaller and lighter so that more equipment can be put at the focal point.
Alternate tracking by changing length of feed support legs; or array feeds. Will need more accurate panels. Phased array feeds will be developed. There will be more digital signal processing; differences between front and back ends will disappear.
Computers will get cheaper. Will get more imaginative scheduling; role of telescope operators will change.
Need a software breakthrough in the area of data acquisition and control.
User interfaces will get better but no one will be completely happy with it.

The 300-foot reminds us that not everything need be done expensively, deliberately or with full consensus of the community. It was very successful although limited in its capabilities.
It was so successful because it appeared quickly and was not very expensive.

National centers drive technological innovation.

300 foot largely left alone by national committees and advisory groups because it didn't seem so important. Try to keep a balance between large projects (telescopes) and smaller ones.

(Even if it falls down its worth the risk). If we don't have the privilege of failure we are in real trouble. Don't try to do too much -- good to do smaller more focussed projects?

Verschuur: 300ft is ideal for low frequency polarization of galactic background (~390 MHz), on-axis and transit instrument are good for this. Long term experiments can keep the 300 foot busy for decades.

NRAO has broken new ground in telescope technology with the 300-ft, also with the 140ft, and with the VLA. hence next instruments must be ones that can break new ground.

Heeschen: value of general purpose parabola is that new innovative receivers can be mounted; thus improving the performance far beyond original expectations.

Heeschen: the 300ft is a fortuitous result of the opportunities that were available at the time. NSF process for funding new instruments is bogged down horribly. Someone will come up with a new way of funding an innovative instrument.