North American
AstroPhysical Observatory

NAAPO (North American AstroPhysical Observatory)

"Signals"
Volume 8 Number 1
The NAAPO Newsletter
(February 1992)

Editor and Publisher:
Earl W. Phillips, Jr.
7893 Thornfield Lane
Columbus, Ohio 43235
614-764-0476

NAAPO Coordinator:
Dr. Philip E. Barnhart
Dept. of Physics/Astronomy
Otterbein College
Westerville, Ohio 43081
614-898-1516

GALILEO VISITS ASTEROID GASPRA

The spacecraft GALILEO, launched from the shuttle Atlantis on October 18, 1990, flew by the main belt asteroid Gaspra on October 29, 1991 at roughly 5:40pm EST. Its closest approach was about 1,000 miles. At the time of closest encounter, Gaspra and Galileo were almost 255 million miles from Earth, and nearly 205 million miles from the sun. One-way communication time from Galileo to Earth was almost 23 minutes.

Gaspra is a main-belt, S-type asteroid. and was believed to be roughly 6 by 7 by 11 miles in size. By comparison CERES, the largest asteroid, is roughly 570 miles in diameter. Gaspra is believed to be composed of a mixture of rocky and metallic minerals. It rotates once on its axis appr. every 7 hours. It was discovered at the Simeis Observatory in the Ukraine, by G. Neujmin.

Before the encounter, a few astronomers thought that there was the possibility of a region of dust surrounding the asteroid, but Galileo detected no such cloud.

There is the possibility of yet another asteroidal encounter. Galileo will be flying near the asteroid IDA in August of 1993, and scientists controlling the craft may command it to perform similar observations there.

Galileo snapped many photographs of the asteroid as it was drawing near. One of them, a black & white was sent to Earth shortly after the encounter. The photograph showed Gaspra to be irregular in shape, with evidence that it is the remains of many impacts. Small craters on its surface show that it is very old, and clefts in the asteroid indicate that it has suffered large impacts. The gravity at Gaspra is 2,000 times weaker than at Earth's surface, so any material blasted free in an impact would have escaped the asteroid's influence.

The rest of the photographs are stored in Galileo's on board recorders, awaiting the spacecraft's second approach near Earth in late 1992, before being downloaded. The cause of this delay is the fact that Galileo's High Gain Antenna failed to deploy properly, and all communications are carried out at an excruciatingly slow speed.

Galileo's primary target is the planet Jupiter. It will arrive there in December of 1995. Once there, it will begin studying the dynamics of that planet, and send a

probe into it's atmosphere.

Galileo is managed for NASA by the Jet Propulsion Laboratory (JPL) in Pasadena, Ca.

11/2/91 MEETING NOTES

The meeting began at roughly 10am. Those in attendance were Phillips, Barnhart, Derinda, Childers, Dixon, Thompson, Nguyen, Janis and Hanson.

Dixon reports that Bob Stephens and his parents came to the ro for a meeting with him and others to discuss the possibility of his moving here. Many subjects were discussed. Certain logistics regarding lodging, etc need to be ironed out. Barnhart agreed to check with his contractor regarding renovating the ro office building to a livable condition. He then reported on his trip to San Diego, regarding educating with computers. There, the latest equipment and software was on display.

Childers reported that his bicycle was stolen from the ro office building, where he had it stored. He then reported that his pattern matching algorithm is detecting broadband sources, such as the sun, galactic center, etc. He states that ESL has been operating almost 24 hours lately, making it difficult for him to do much more.

Nguyen reports that the phone line at Jones Middle School is out, and they are now electronically incommunicado. He agreed to log onto magnus from home on a weekly basis to d/l messages for Mrs. Snyder.

Janis reports that the KLT colloquium will be held at Dreese Hall, on OSU campus. A few expressed interest in attending.

Hanson brought in a Fisher stereo for donation to the focus room, so that we may record on tape any interesting signals we receive. We have been recording them on a recorder borrowed from Russ Childers' girlfriend up till now.

Barnhart reports that his Spring '92 sabbatical will be spent decoupling NAAPO from Otterbein, in preparation for his retirement from there in a couple years. He has received a request from a reader of Signals to include more positive reports in this newsletter. We shall endeavor to do so!

The meeting broke at roughly noon, with most going off to their respective tasks.

11/16/91 MEETING NOTES

The meeting began at roughly 10am. Those in attendance were Barnhart, Phillips, Schumacher, Dixon, Derinda, Ayotte, Murdoch, Leeseberg, Childers, Brown, and Janis.

Barnhart reports that we have a problem with the disposition of much of the clutter in the ro office building. We need to decide what to do with it in preparation of Bob Stephens' arrival. Some ideas were put forth; storing it external to the building, or simply tossing it out. It was felt that external storage merely puts the problem off till later, and tossing it out seemed a better idea. A dumpster will be arranged, and we will be calling for working parties to help clear it out. Barnhart also reported that his contractor has agreed to perform the renovation for the amount we can afford to pay. In order to accomplish this, the contractor will volunteer some of the labor, and purchase materials at a discount. John Ayotte felt that he could possibly obtain a refrigerator and stove free, being donated by his company. He will look into this possibility and let us know.

Childers reports that he has detected a mysteriously operating satellite. He will attempt to identify it.

Dixon gave us a slide show on his recent trip to San Diego, for the USA/USSR SETI Conference. All the famous people, as well as some not so famous, were pictured. The grounds themselves were quite picturesque. A slide show of the 11/8 aurora was then shown.

John Ayotte reports that his son's scout troop will be able to volunteer some physical labor for a while, as we need it.

Leeseberg reports that he has been giving a few talks on SETI to schoolchildren. Many have expressed interest in touring the ro as a result.

The meeting broke at roughly noon, with most going off to their respective tasks.

LIGHT POLLUTION UPDATE

The battle against light pollution as it affects Perkins optical Observatory, is proceeding very well. Currently, all the surrounding townships have either written lighting restrictions into their zoning codes, or have agreed to do so. Additionally, those who have yet to amend their zoning codes have agreed to provide correct lighting information to any developer interested in the area, and will ask them to abide by those restrictions. Of the few developers already interested in the area, all have agreed to abide by the lighting restrictions. As an aside, some of the developers and townships have agreed to allow the use of their correctly lighted developments as models, to show other potential developers the proper way to light so as to not drastically affect the observatory.

GLEANINGS FROM THE E-MAIL BAG

From: Tom A: Hanson
Subject: Additional Donations
Date: Sun, 27 Oct 1991

Per Angie's recommendation the Kerosene heater will be undonated, but it will be available to a deserving (and qualified) charity. A Fisher stereo with dual cassette deck has been provided. I'm hoping Russ Childers will be able to use it to replace the borrowed recorder at the RO. Components for providing manual/remote operation of 20 pneumatic valves to assist in moving the flat have been delivered to Dreese 805. Volunteers are needed to assist in preparing these components for mounting.

From: Stuart Kingsley
Subject: OpticalSETI/SETI BBS
Date: 28 Oct 1991

Today, my new bulletin board system came on-line. It will be devoted mainly to the Optical Search For Extraterrestrial Intelligence (SETI), but will also have a conference area (forum) devoted to TVRO and Intelsat reception. The BBS is now open to receive registrations on (614) 258-1710, 9600 Baud, MNP, 8N1. It will be several weeks before I have configured the files that are now on the hard disk to be

available for downloading. The BBS software being used is Wildcat 3.0

From: Stuart Kingsley
Subject: The Planetary Society appeals for funds to support BETA
Date: 14 Nov 1991

Have just received an appeal from Dr. Louis Friedman and Steven Spielberg for Planetary Society members to make a contribution to the Harvard BETA project. This will eventually have billion channels with 0.05 Hz resolution. Me still thinks that they looking in the wrong spectral regime . . .
Stuart

From: Philip Barnhart
Subject: renovation
Date: 19 Nov 1991

Am off (9:30) for the RO right now. Tuesday 19 1991: I should be there from about 10 til 2:00 today. Agenda: Clearing 'junk'; confering with contractor.
peb

---

ed. note:

Those that have electronic access to the internet, also have access to various newsgroups. 2 of these newsgroups, sci.astro & sci.space, frequently contain news of interest to Signals readers. I am including selected excerpts for those that do not have electronic access. If you find this new feature to be of interest, and would like to see it become a regular feature, please let us know!

From: baalke@kelvin.jpl.nasa.gov (Ron Baalke)
Newsgroups: sci.space, sci.astro

Subject: Magellan Update 11/18/91
Forwarded from Anthony Spear, Magellan Project Manager

MAGELLAN STATUS REPORT
November 18, 1991

The Magellan spacecraft continues its excellent performance. All subsystems are nominal, temperatures are in the acceptable range, and pointing accuracy remains precise. These were only two partial STARCALS {star calibrations) over the weekend, the other 18 being totally successful. A Pseude-Tweak upload is planned later today and will become active on Tuesday, November 19. Note that revised uplink processes now include a two-week sequence load that is subject to a Pseude-Tweak three times on approximately one-half week intervals.

As of 10:15 PM PST, Magellan has completed 3046 mapping orbits of Venus.

From: baalke@kelvin.jpl.nasa.gov (Ron Baalke)
Newsgroups: sci.space, sci.astro
Subject: Magellan Update 11/19/91
Forwarded from Anthony Spear, Magellan Project Manager

MAGELLAN STATUS REPORT
November 19, 1991

The Magellan spacecraft continues its excellent performance. The star scanner accepted a bad update this morning, and express commands were uplinked to open up the innovation bounds and disable bias update processing. The next star scan was successful and express commands were uplinked to close the innovation boundsback to .07 degrees and to re-enable bias. The Traveling Wave Tube Amplifier experienced its nineteenth Spurious Shut Off (SSO) in flight this morning. Fault Protection recovery was nominal. No mapping data was lost as the SSO happened while the spacecraft was off Earth point. The Pseude-Tweak upload was uplinked on Monday and became active on Tuesday, November 19. As of 10:15 PM PST, Magellan has completed 3053 mapping orbits of Venus.

From: baalke@kelvin.jpl.nasa.gov (Ron Baalke)
Newsgroups: sci.space, sci.astro
Subject: Magellan Update 11/20/91
Forwarded from Anthony Spear, Magellan Project Manager

MAGELLAN STATUS REPORT
November 20, 1991

The Magellan spacecraft continues its excellent performance. All subsystems are nominal, with temperatures within acceptable limits. As of 10:15 AM PST, Magellan has completed 3061 mapping orbits of Venus.

From: baalke@kelvin.jpl.nasa.gov (Ron Baalke)
Newsgroups: sci.space, sci.astro
Subject: Re: Magellan Update 11/18/91

In article <2563@mpirbn.mpifr-bonn.mpg.de>,
p515dfi@mpirbn.mpifr-bonn.mpg.de (Daniel Fischer) writes...>
In article <1991Nov21.011159.20866@elroy.jpl.nasa.gov>baalke@kelvin.jpl.nasa.gov writes:>>

MAGELLAN STATUS REPORT>>
November 18, 1991>>

A Pseude-Tweak upload is planned later today and will become>
There's this pseude(o?)-tweak again. WHAT IS IT? Magellan has its normnal sequence load uploaded every two weeks. A provision was put it to tweak the radar mapping control parameters on a weekly basis, if necessary. The pseudo-tweak in this case is a change to some of the parameters in the fault protection to adjust for thermal changes in the environment around Magellan.

From: baalke@kelvin.jpl.nasa.gov (Ron Baalke)
Newsgroups: sci.space, sci.astro

Subject: Galileo Update 11/21/91

GALILEO STATUS REPORT
November 21, 1991

The Galileo spacecraft is operating normally in the dual-spin mode and transmitting coded telemetry at 10 bps.

Today, no spacecraft activities/DSN (Deep Space Network) tracking coverage are scheduled. Tomorrow, a stored sequence planned SITURN and memory readout activities for the imaging instrument (SSI) and EUV (Extremes Ultraviolet Spectrometer) instrument are scheduled.

From: baalke@kelvin.jpl.nasa.gov (Ron Baalke)
Subject: NASA Headline News - 11/20/91 Wednesday, November 20, 1991 Audio Service: 202 / 755-1788

This is NASA Headline News for Wednesday, November 20, 1991 . . Shuttle program officials have worked out a schedule for the replacement of the faulty DSP satellite's Inertial Upper Stage inertial measurement unit which caused yesterday's postponement of Atlantis STS-44 launch. Technicians should be able to enter Atlantis' payload bay around noon today to remove the faulty IUS device and proceed with replacement of a flight-qualified backup unit. If the removal, replacement and retest of the replacement unit go as planned, and the replacement unit is cleared for flight, the launch countdown could be picked up again at midnight tomorrow. That would lead to a new launch time of 6:31 pm EST Sunday, Nov. 24. The Sunday launch window extends through 9:01 pm. Crew commander Fred Gregory remarked yesterday that, though the crew is "anxious to begin the mission", they fully recognize the importance of ensuring the safety of the mission and guaranteeing the success of its primary objective, deploying the DSP satellite. NASA yesterday announced the selection of seven Historically Black Colleges and Universities to receive research grants to further develop the universities' research capability and research infrastructure. The program will award approximately $500,000 dollars each to the seven schools for the first year, with follow-up awards made on the basis of focused research in a variety of applicable or related space science or applications fields. The colleges selected are: Clark Atlanta University;

Fisk University, Nashville; Florida A&M University, Tallahassee; Hampton (Va.) University; Howard University, Washington, D.C.; North Carolina A&T State University, Greensboro; and Tuskegee (Ala.) University. The selections were based on competitive review by a team of industry, government and academic evaluators. The funding comes from a new NASA educational research initiative called Core Research Center, and represents a way of tapping into a pool of underrepresented minority students and faculty who would be nurtured and developed at the selected institutions.

Stennis Space Center officials report that following the conclusion of a 420-second test this past Friday, Nov. 15, the Space Shuttle Main Engine program has accumulated more than half a million seconds of firing time. Friday's test of SSME #2011 brought the SSME engine firing time to 500,132 seconds. SSC Director Roy Estess said the achievement brings the shuttle main engines, built by Rocketdyne Division of Rockwell International, into the category of some of the most famous "most fired" engines in space program history. Other engines with comparable times include the F-1, J-2 and H-1 engines used on the Saturn rockets and the venerable Atlas and Delta main engines. Rocketdyne President Robert Paster said the achievement "says a great deal about the teamwork between Rocketdyne and NASA over the years."

Jet Propulsion Laboratory flight controllers report that Galileo is now more than 275 million miles from Earth, heading towards Jupiter at a velocity of 34,300 miles per hour. Round-trip communications time is now nearly 50 minutes. The Galileo project office also reports that the green image taken of Gaspra, and released as a black-and-white image last week, has now been joined by three other versions, taken through two infrared and one violet filter. The imaging science team will analyze and compare these images looking for variations in the asteroid's surface composition.

A reconstructed color image of the 7-by-10 mile rocky chunk is expected in the next few months. The next major activity planned for Galileo is a resumption of attempts to free the spacecraft's stuck high-gain antenna. That activity will begin early next month. Meanwhile, other elements of the spacecraft continue to perform flawlessly. Here's the broadcast schedule for Public Affairs events on NASA Select TV. Note that all events and times may change without notice, and that all times listed are Eastern. [missing text] indicates a program is transmitted live. Wednesday,

November 20, 1991 12:00 pm Flight for the Future. 12:30 pm Operations in Space. 1:00 pm Apollo-Soyuz Mission. 1:30 pm Questions of Life. 2:00 pm Starfinder program #30. 2:15 pm From Decision to Reality. 2:30 pm Everyone Can Make A Difference. 3:00 pm Total Quality Management #65 (Univ. of N. Mex series). 4:00 pm NASA Today and subsequent programming repeats. 8:00 pm NASA Today and subsequent programming repeats. 12:00 am NASA Today and subsequent programming repeats. This report is filed daily at noon, Monday through Friday. It is a service of NASA's Office of Public Affairs. The editor is Charles Redmond, 202/453-8425 or CREDMOND on NASAmail. NASA Select TV is carried on GE Satcom F2R transponder 13, C-Band, 72 degrees West Longitude, transponder frequency is 3960 MegaHertz, audio subcarrier is 6.8 MHz, polarization is vertical.

12/7/91 MEETING NOTES:

The meeting began at roughly 10am. Those in attendence were Dixon, Barnhart, Phillips, Schumacher, Brown, Janis, Childers, Leeseberg, Huck, and Hanson.

Dixon reports that he's sent a long letter to Bob Stephens regarding some of the points needing to be hammered out previous to coming here. Bob called Dixon to discuss some of the points. Most seemed to be ironed out. Barnhart reports that the remodeling of the ro office building can be completed by 1 Jan '92, provided that he gets started by 16 Dec. He has also received an estimate from a plumber regarding the plumbing situation. It will cost roughly $2050.00 for parts, and $1900.00 labor. There is a big problem regarding the potable water question, which will need to be ironed out.

Childers reports that he wants to begin cooling the LNA's with liquid nitrogen. The dewar may need to be re-evacuated first. Hanson reports the he has been working with Brown at Dreese on a computer there, and has it nearly completed.

Leeseberg is planning some tours in the spring of the ro. This is his last meeting till April, as he will be in Florida till then.

Brown reports that he has been in contact with people at the OSU supplies dep't, and they have agreed to take away some of the equipment we're trying to get rid of. There has been no word on the dumpster yet.

Schumacher reports that he is working on the Fourier and KLT transforms, and is posting results to the electronic bulletin board.

The meeting broke at roughly 11:30am, with most assisting in the ro office building clean-up.

MORE GLEANINGS FROM THE E-MAIL BAG:

From: Phillip Schumacher
Subject: KLT FFT comparison files
Date: 9 Dec 1991

I have uploaded 2 new FFT results files in place of the files I uploaded earlier. The file names are kltfft1 and kltfft2. kitfft1 contains results for noise only. kltfft2 gives results for noise plus one sinewave of frequency 0.5 radians/point and intensity of 20 and 40% of the noise amplitude. As mentioned previously, the number of data points used for the FFT is twice the indicated correlation length. The FFT values are the power at the indicated frequency as Bob Dixon suggested at the Saturday meeting. The FFT values now cluster around values depending on the number of points. The FFT values increase with increasing data points, while the KLT max eigenvalue decreases with increasing correlation length and increases with increasing lag. I will try to develop some statistics for the FFT results as I did for the KLT to estimate the signal detection limit of both methods: I still have not tried chirp signals but still plan to test some variable frequency ones.

From: Stuart A Kingsley
Subject: Professor Charles Townes & Infrared Optical SETI
Date: 10 Dec 1991

The December issue of IEEE Spectrum contains a profile on Professor Charles Townes (1964 Nobel Prize for lasers and masers). At the end of the article, it mentions that Professor Townes is using a twin-infrared (interferometer) telescope to investigate a possible black hole at the center of the galaxy. What the article fails to mention is that the CO2 telescope system is also being used for SETI. Talk about keeping this activity low-profile! Considering that NASA has been funding this SETI activity (up to now mainly hardware) at the rate of about $50K per year for

the past five years, this does appear a bit strange. Albert Betz, who is working with Townes on this project, has informed me by email that they haven't exactly aggressively marketed the information that they are doing this SETI work. Those who attended the USA-USSR SETI meeting in Santa Cruz last August will know about this — but few others. I did ask Betz if the reason why this work was so low key had anything to do with a certain fear of being ridiculed by their more conservative astrophysical colleagues. His response was that this was not the concern, but that they had just not bothered to "tell the world" (my paraphrase).

From: Stephen B. Brown
Subject: Renovations at RO
Date: 11 Dec 1991

Tuesday, 12/10, OSU'S Surplus/Salvage Department sent a truck up to the RO. They removed nearly all of the stuff stacked outside, east of the office building. They also agreed to return in a week or 10 days for the remaining stuff.

From: Phillip E Barnhart
Subject: Work party Saturday
Date: 12 Dec 1991

All able bodies to the RO Saturday morning 14 DEC 1991. There is still much to move. I will be in Indiana so someone needs to lift my share.

From: Philip E Barnhart
Subject, Monday moving crew
Date: 12 Dec 1991

Next Monday I will be moving two refrigerators (new) and one stove (new) to the R0 from Hilliard and John Ayotte. I could use a hand at both ends and in the middle if someone is available. Contact me at 898-1516 today or Monday before 9:30. I will be at home 882-6711 on Sunday.

From: Philip E Barnhart
Subject: NAAPO/OTTERBEIN FAX Service
Date: 12 Dec 1991

I may now be conveniently reached (after bug removal) at a FAX machine just outside my office door; the number for NAAPO/OTTERBEIN is 898-5968. This is easier than the general college service which often involved delays and lost messages.

N.B. SJanis - - - You can insert this number onto the RO Roster beside my name.

From: Steve Janis
Subject: P. R.
Date: 12 Dec 1991

Bob Dixon's "Reoptimization of the Ohio State University Radio Telescope for the NASA SETI Program" has been published in the NASA Conference Publication "Fourth Symposium on Chemical Evolution and the Origin and Evolution of Life (Proceedings of a symposium held at NASA Ames Research Center, Moffett Field, CA., July 24-27, 1991)." Bob's article was originally a presentation he gave at the symposium.
SJ

PS: We have a copy of the publication in Dreese 805 or I can send photocopies to interested parties.

From: Steve Janis
Subject: Roster update
Date: 12 Dec 1991

I have been going the through the roster in order to update it. Unless someone

objects, I am planning on deleting the following people from both the roster and e-mail/private.radobs due to inactivity: Bob Bates, and Jerry Vlasak. There are other inactive volunteers who will probably be deleted in future updates.

From: Steve Janis
Subject: Sat. Work Session
Date: 14 Dec 1991

Dixons (Bob and Kip), Brown, Hanson, Campanella, Childers and myself rearranged the contents of the RO Office Bldg. today. The 3 Northern rooms (excluding the restroom) were completely emptied. Desks, tables and other major furnishings were moved into the conference room thus making it unusable as such. Useful electronics, paper, and hardware items were moved to the shop room. Much was designated as junk. The 3 large printers were placed outside for the junk man. The outside restroom was cleared of debris amongst which was a not-so-recently departed squirrel. There is also a large supply of very heavy white computer paper which has been deemed unusable. I am trying to contact the recycling people at OSU to see if we can drop it off on campus for recycling. If not, it will be trashed.
SJ

PS: There seems to be a problem with the tarp covering the pod. Because of the tall pole attached to one corner, the tarp was folded under itself on that end. However, today's wind easily lifted that end of the tarp up. When gusts subside the tarp comes back to the proper position, but if we get precipitation with wind, the purpose of the tarp may be defeated.

From: Tom A Hanson
Subject: Chart Paper Delivered to Jones Middle School Doorway
Date: 14 Dec 1991

A quantity of high quality chart paper, recently discarded by the cleanup crew at Radobs, mysteriously materialized in a northern facing doorway of Jones Middle School. Since the school is securely locked for the holiday season, it is to be hoped that one of the Middle School Elves will carry the chartpaper inside before it

disappears or succumbs to the elements. As a comment, the Radobs Admin building **could** be used for a meeting next week, if the stack of folding chairs, which was carefully tucked under something which will now be hard to reach, is retrieved and set up in the northwest corner room.

From: Bob Dixon
Subject: New Horn Design
Date: 16 Dec 1991

John Kraus has completed the scale model of his new horn design for the telescope. It uses helices inside a trough, and he believes it will achieve 2:1 bandwidth. The model is 1/4 size, operating at 7 GHz. He is taking it now to ESL for testing.

From: Bob Dixon
Subject: RO Water
Date: 16 Dec 1991

John Kraus reports that many Delaware County residents are having trouble with wells slowing down in the drought, so they are installing fiberglass tanks in their garages, and having a water co fill them. There is a company called Payoff Water on Peachblow Rd one mile south of the RO that will provide water at $50/ trip.

The water co says that there are no legal, health or inspection problems. (Not that they are unbiased).

From: Phillip Schumacher
Subject: KLT FFT comparisons
Date: 17 Dec 1991

I have uploaded 2 klt-fft comparison files, replacing the previously uploaded files kltfft and kltfft1. The file kltfft is the pure noise test, while kltfft1 has 1 or 2 sine waves present. The program was modified to show the average and average FFT

frequency. This makes it easier to evaluate/compare the two transforms.

From: Phillip E Barnhart
Subject: Monday at the RO
Date: 17 Dec 1991

Yesterday, December 16, a date which will . . . (sorry, wrong speech) demolition started at the RO. Reconstruction will commence today. There will, because of scheduling and holidays, be a delay in getting the plumbing started. A water supply solution seems to be near. All of this depends upon getting authorization from the RF to expend notable sums of money. We will need several thousand bucks for materials, cabinetry and plumbing fixtures. Two new refrigerators and a new stove were delivered on schedule in the afternoon. MANY, MANY THANKS TO JOHN AYOTTE FOR COMING THROUGH IN SUCH A TIMELY AND APPROPRIATE FASHION. THIS WAS A $1500 CONTRIBUTION. WE NEED A BANQUET TO CELEBRATE THIS DONATION.

From: Philip E Barnhart
Subject: Meeting this Saturday
Date: 17 Dec 1991

SPECIAL NOTICE Due to the current status of the conference room at the RO we will meet this Saturday at 10:00 am in the lecture room of Perkins Observatory to conduct our regular business meeting. As there is much that can be done at the site, we will retire to that place following the discussion at Perkins. I will try to do something about the tarp on the storage pod next time I get there. I need to place some strategic stakes along side the affair and will try to tie down the errant tarp corner. MEET AT PERKINS!!!!

From: Bob Dixon
Subject: My Absence
Date: 17 Dec 1991

I will be on vacation in Wisconsin starting this Sunday, for a week.

From: Steve Janis
Subject: My absence too
Date: 17 Dec 1991

I will also be out of town for about a week for the Christmas holiday. I will attend this Saturday's work session, but will be in Cleveland after that until the following Saturday.

From: Philip E Barnhart
Subject: Agenda for Saturday
Date: 20 Dec 1991

1. Construction Report
2. Work session crews needed:
   a. Clearing 9 x 9 area in garage for water tank installation
   b. paint crew to finish inside decor for apartment (paint will be donated)
   c. misc.
3. Money matters

REMEMBER: MEET IN PERKINS LECTURE ROOM AT 10:00 AM!!!

From: Earl W Phillips
Subject: the next CAS prez is...
Date: 22 Dec 1991

Not me. I lost my bid, so I now have more time to devote to the Perkins observatories!

From: (Rodney Ferryman)
Subject: Dave Jurgens
Date: 26 Dec 1991

Ali Vardag called me this morning to inform me that Dave Jurgens passed away on the evening of December the 19th (last Thursday). Both Ali and Dave were student consultants for the former IRCC several years ago and did some work for SETI.

From: Tom A Hanson
Subject: Stephens' Trucks - Licensing Requirements
Date: 27 Dec 1991

According to a representative at the Highway Patrol headquarters in Columbus, Bob's 18 wheelers can be operated in Ohio by persons with ordinary drivers licenses, as long as the operation is of a non-commercial nature. The representative reminded us that the vehicles must be properly licensed and insured in Canada, in order for the reciprocity agreement to be in effect. Small aside to Steve Janis — As you might have expected, the facilities department was closed on December 24th when I arrived at about noon to pick up the extra manuals.

12/21/91 MEETING NOTES

The meeting began at roughly 10am. Those in attendance were Barnhart, Dixon, Phillips, Mirisciotta, Hanson, Janis, Brown, Jim Sheets, Schumacher, Nguyen & his guests Mr. Milling & son John. We met at the Perkins optical Observatory's lecture room, as the ro office building is under renovation.

Barnhart reports that he has been talking with Dr. Kraus by fax about supplying the ro with potable water. It has been tentatively decided that we will install a 2500 gallon polyethelyene tank in the garage, and run a line to the office building. Delco will be delivering the water to fill it, at a cost of $50.00 per trip. This means the annual water cost will be appr. $200.00. The tank itself, along with delivery, will cost appr. $1100.00. Barnhart also reports that we have received an anonymous donation of $1k, with the possibility of another $1k in the future. Barnhart is also going to check into the possibilities of burying the tank nearer to the office building, as well as possibly tapping into Delco's water lines, near to Perkins.

Brown reports that the stuff in the ro office building needs further sifting to determine what is useful and what can be tossed out. He has also received an estimate on painting the parabola, of $30k. For roughly double that amount, the same company will paint both reflectors.

Nguyen reports that Jones is still having problems with their electronic hookup, and there is now a large backlog of messages. He will mark them all as read so that he can start afresh.

Janis reports that he has spoken with people at NASA re: our funding. The proposal has been assigned an official grant #, and it is felt that this action will facilitate the flow of funds from OSU to pay our construction costs.

Hanson reports that several rolls of chart recorder paper was delivered to Jones Middle School. He has also met with Ang Campanella, who has volunteered to renovate all of the new brake valves so that they can be operated without the need to climb each of the bays. He has also encountered a new difficulty with the card reader, and will continue to work on it.

Schumacher continues to work on the FFT-KLT comparison, and posting results electronically.

Dixon reports that he and Klein, Brown, and Bolinger will be sending a proposal to NASA re: the radio camera. He also reports that he has been contacted by Grote Reber, who is now studying the growth characteristics of vines. Seeds that Dr. Dixon sent to him a while ago turned out not to be vines, and he needs more seeds sent to him.

We received the donation of a brand new electric stove and 2 brand new refrigerators, thanks to the efforts of John Ayotte. We wish to heartily thank John for this timely donation. The stove and one of the refrigerators will go to the apartment for Bob Stephens, and the other refrigerator will become the new home for our soda supply. The refrigerator we are currently using for that will be donated to Perkins optical, to replace their ancient and faulty one.

The meeting broke at roughly 11:4am [is this time 11:04 or 11:40?], with most going off to their respective tasks.

Death of Dave Jurgens

ed. note: While putting this issue of signals together, I learned of the death of a very good friend, and past volunteer to the ro: Dave Jurgens. His presence will be missed greatly by all of us associated with the ro.

STILL MORE GLEANINGS FROM THE E-MAIL BAG

From: Susan Snyder
Subject: DIS & DAT
Date: 29 Dec i991

I figured out how to skip through the backlog of Snyder's messages with the help of my brother who knows his way around UNIX (not). You simply type R ### and you can jump around. How exactly do you turn that darn "more off"? Will the TERM SLOW thing work?

From: Stephen B. Brown
Subject: K-L sample case
Date: 3 Jan 1992

Those looking into the K-L transform have been looking for test cases which are not based on sinusoidal waveforms. I have constructed a small test case in the file ~sbbrown/radobs/signal-1. I believe that FT-based methods would have difficulty finding the signal in this sequence. The file is 1024 points, 1 per line. The signal (that is, the modulated portion) does not extend over the entire 1024 points. The S/N ratio is approximately 1. This file presents several challenges: 1. What portion of the file is modulated? 2. What is the nature of the modulation? What basis function [s] does the K/L transform report? 3. What is the encoded message? (It's a bit string, which can be interpreted in ASCII.) If there is sufficient interest in test cases of this sort, I have some other ideas (time permitting) for constructing them.

From: James L Bolinger
Subject: Magnus Bungled??

Date: 4 Jan 1992

What have they done with the Magnus comm links? Tried to check in after an absence of two weeks, using my old tried and true method. This is by dialinq 292-3112 at 1200 baud, 7 bits no parity, This always worked in the past. It worked this time up to the 'GO' prompt. This(?) time Magnus spit up a glob of ASCII puke. This happened regardless whether I type three CRs or not, as requested. (If you are connected via the switch, why does the Magnus computer care anyway?). By using the high speed HM connection, I was able to get past the GO, but it would only echo every second character that I typed, This makes it hard to log in. Tried switching to 8 bits, no parity. This did the same thing on the normal MAGNUS. When I tried the HM (high speed) connection...well, obviously it worked or you would not be reading this.Whats going on here?

From: Tom A Hanson
Subject: Van Horne Lanyard project advanced by Campanella
Date: 4 Jan 1992

Since Tom Van Horne's interest in moving the flat reflector inspired the current effort to operate stuck valves from ground level, I have decided to identify the project as shown in the Subject line. Thursday evening Ang Campanella turned over to me the pieces of metal with drilled holes which he had agreed to complete as part of the overall project. I am impressed by the workmanship. If the rest of us do as well, we'll have a nice looking system. Of course, if the design turns out to be inadequate for some reason, I will accept responsibility for any shortcomings. Remaining tasks include: A. Locating wooden components to be glued to valve heads; B. Installing a test package to validate the design; C. Bending the metal pieces; D. Painting the metal with rustoleum; E. Mounting screweyes on the pieces; F. Mounting complete assemblies; G. Testing all 20 installations; H. Toasting with a jug of Dr. Pepper (or whatever). Note: Having stayed at work until midnight Friday night to prepare for a Monday morning deadline, I decided to forego attending today's meeting at the RO. I'd appreciate a brief summary of what occurred, if anyone who attended would be willing to make a report here. A TI 810 printer (potentially suitable for use as an asynchronous printer without keyboard) was recovered from a temporary loan situation, and delivered to Dreese 805. It needs some attention to restore it to full operation.

From: Tom A Hanson
Subject: Card Project Status
Date: 6 Jan 1992

As 1991 wound down, Steve Janis tested some new JCL written to carry out storing of trays of cards from the hallway outside Dreese 805. A number of errors were found (more accurately, two errors repeated 25 times), so further testing was deferred. All known JCL errors have been removed, so it is fair to say we are ready to have another go at testing the tray JCL. It is my understanding that Electrical Sciences Lab will provide a couple of work study students, once we have procedures in place to use them effectively. The JCL for reading boxes from the vault has been completely revised and updated, to keep it in line with the tray JCL. However, the box project awaits the arrival of a team leader. Perhaps 1992 will bring us good fortune in this area.

Rodney Ferryman stopped by during the JCL changes, and reported that he had talked to Earl Phillips, who attended the RO meeting on Saturday. Apparently it was a brief meeting, on the order of 45 minutes.

From: Phillip Schumacher
Subject: KL Transform test file
Date: 6 Jan 1992

I was unable to gain access to Steve Brown's file ~sbbrown/radobs/signal-1. I used the dir and copy commands. Am I leaving out something? My directory is /asc/top/1/pschumac; do I need something like this to access Steve's file also?

From: Phillip Schumacher
Subject: File access
Date: 6 Jan 1992

I looked up the instructions I got from the consultants re: file sharing. I tried cp cp ~sbbrovm/radobs/signal-1, signal-1 and got the response - permission denied. Has group read permission been given for the file and the main directory?

From. Bob Dixon
Subject: Asbestos Removal Reminder
Date: 6 Jan 1992

The 8th floor of Dreese will be sealed off next Aug 27 to Sept 16 for Asbestos removal. Plan ahead, and don't forget. Steve J please remind us, and post a sign now so we don't forget.

From: Bob Dixon
Subject: Dayton Hamvention
Date: 3 Jan 1992

Last year we tried to get a flea market space at the Hamvention to sell our surplus stuff, but we were too late. Now I have received a mailing about it. The date is April 24-26. The cost for a space is $30 for a normal space, or $60 for 2 adjoining spaces, or $150 for 3 adjoining. or $215 for a space in the tent. Are we interested in going?

From: Philip E Barnhart
Subject: Paint People
Date: 10 Jan 1992

For those who decide to show up to paint this Saturday (or whenever): 1. There is a supply of 8 gallons of wall paint in the new apartment. It is not far from the color we smeared on the hall and the conference room. For that reason it might be well to use up the old paint (still in the shop area) before starting on the new. There is somewhat over two gallons of the left-over stuff there. KEEP IT ON THE WALLS IN ONE ROOM. DON'T BLEND FROM TWO PAINT SUPPLIES IN ONE ROOM. There are four fresh rollers. I notice someone threw the other rollers away

instead of washing them, This is a bit wasteful. 3. Better take several gallons of clean water to use on equipment and spots on the floor. Latex paint is water soluble if gotten before it hardens. 4. Please keep as much off the floor as possible and clean up what does spill. The apartment may be ratty, but it shouldn't appear ratty. 5. There are also new edgers on hand. It makes the touch-up easier and looks nice. 6. The hall sides of the filled doors need to be primed. I think there is a 5 gallon container with paint there to be used for prime coating. If you can't find it, wait on the prime coat till some gets there. 7. Some one report to me when the day is done so we can plan down the line.

From: Philip E Barnhart
Subject: My absence next week
Date: 10 Jan 1992

From 4 pm today till the end of next week I will not be readily available for RO business. Esther goes in for minor surgery on Monday and I will be spending a lot of time shuttling between class and the University Hospital through Thursday. Messages may be left here and will be checked routinely, but do not ask me to attend to jobs at the RO. I intend to be present for the Saturday business session.

From: Philip Schumacher
Subject: KLT test results
Date: 14 Jan 1992

I have changed the KLT test program to calculate the results of combining the eigenvectors determined by the KLT. Two reconstructions are calculated: one uses all the eigenvectors, the other only uses the eigenvectors corresponding to eigenvalues above the eval threshold. The result is calculated by multiplying each element of the eigenvector by the corresponding eigenvalue and summing the results. This produces a signal with the number of points equal to the lag used to calculate the autocorrelation function. I have uploaded a portion of the output file as kltrecon1. Five sinewaves of the indicated amplitude and frequency were used for the test. The signal reconstruction which uses the eigenvectors corresponding to the large eigenvalues resembles the signal used. I haven't tried to plot the resulting

signals to compare them to the input signals as yet, but the frequencies look about right. I'll try the same approach on Steve's test data to see if a recognizable signal appears.

From: Bob Dixon
Subject: WOW! Object Coincidence
Date: 21 Jan 1992

Bob Gray of Chicago called me to say he has discovered a coincidence regarding the WOW! object. Its frequency offset from the Local Standard of Rest (LSR) is what would be expected of a transmission from a star in the solar neighbor directed to the solar system. In other words, if a civilization associated with some star not too far from the Sun were making a directed transmission to our Solar System, they would pre-doppler shift their their transmitter to compensate for the (known to them) velocity of our Sun relative to the local rest frame. The signal appears to be at that predicted frequency. Note that when we were observing and discovered WOW!, we were making much more universal doppler corrections, assuming that the logical common rest frame is that of the center of our galaxy. Bob Gray has broken the doppler shift back down into the individual components, and made this discovery. Any ideas about this? This all assumed they are using the rest frequency of Hydrogen (1420.4056 MHz), and doppler correcting that frequency. I believe Gray calculated the offset to be about 50 kHz due to the Sun's motion, and that is where he finds the signal, The other components of motion due to Earth's rotational and orbital motions have also been taken into account, as the aliens presumably could not know about the Earth, but would know about the Sun and its motion.

From: Bob Dixon
Subject: Optical ETI talk at Perkins on February 15 at 8 pm
Date: 22 Jan 1992

Please arrange for this tour. I presume it will have to be before the CAS meeting so people are not stumbling around in the dark, and that means people will have to be notified somehow.

1/4/92 MEETING NOTES

The meeting began at roughly 10am. Those attending were Barnhart, Phillips, Janis, Dixon, Brown, and Huck.

Barnhart reports that he met with Dr. Kraus at the RO before the meeting, and that he seemed pleased with the renovation job so far. We are ready to start on the water system. The carpenter will begin a trench for the waterfeed between the tank and the office building, The tank will be installed in a small shed, to be constructed next to the office building. Total cost of materials for this shed will be ~$1K, which NAAPO will cover. We are also ready for the paint crew to begin painting the parts of the apartment that are finished. John Ayotte's son's boy scout troup may be available for the painting and he will check with John. He also received a call from Mike Mirisciotti regarding the possible donation of a VAX 11/780 from Chemical Abstracts. It was decided we don't want it, due to storage problems.

Dixon brought in some newspaper clippings regarding SETI. He reports that he has some carpeting that he will donate to the rennovation project.

Brown reports that one of the RL0-2 drives in the computer in the focus room is dying and must be replaced. He has temporarily relabeled it so that it is not accessed frequently, and will replace it soon.

Huck volunteers to do some painting next Saturday. Barnhart will try to arrange a paint-fest for then.

The meeting broke at roughly 10:45am, with most going off to their respective tasks.

1/18/92 MEETING NOTES

The meeting began at roughly 10am. Those attending were Barnhart, Schumacher, Dixon, Derinda, Hanson, Phillips, Huck, Janis, Campanella, and Childers.

Barnhart reports that Mrs. Barnhart has come home from the hospital. She had a benign tumor removed from her thyroid. She is reported to be recuperating rapidly, and is up and about already. The water system is ready to install, & the tank will be delivered in less than a week. The building to house it is nearly completed. After the painting of the new apartment is complete, we will begin removing some of the desks, etc. back into that half of the building.

Dixon has generously donated a check he received for his contribution to the book "First Contact", a book on SETI. The OSU Computer Center is working on speeding up the Magnus computer. One addition will come in the area of e-mail; OSU will distribute a utility that will allow you to download your mail into your PC, process it with your editor, then upload it back to Magnus for distribution. This will reduce the time necessary to be logged into Magnus.

Schumacher reports that he continues to work on a dataset supplied by Steve Brown, that has a message buried in it somewhere. He hasn't yet extracted the message, but feels close. He also reports on the possibility of funding from NASA for a grad student to do some work at the telescope.

Hanson brought parts to be attached to the new pneumatic valves for the brake system on the flat reflector. Schumacher will look into the possibility of getting some done where he works.

Childers reports that the horn cart is not yet moveable, due to the collapse of the scissors mechanism. He will attempt to repair it with stronger welds.

Huck reports that he painted the bedroom in the new apartment last Saturday. A bit of touchup is still necessary. He will return next Saturday to do more.

The meeting broke at roughly 11:15am with most going off to their respective tasks.

COORDINATOR'S CORNER
BY PHIL BARNHART

Events have moved rapidly ahead in the past two months. Steve Janis has successfully manipulated the OSU bureacracy to keep the remodeling project on schedule at the RO. It looks like the job will be done for all practical purposes on 1 February. Our target date was 1 January, but that was before we finally settled on a large water storage tank and two separate plumbing systems. The tank was installed on 20 January, and the final wall on the water storage room was completed on the same day. Plumbing should be done this week.

John Ayotte, a volunteer very active a few years ago, has returned to his impressive level of volunteerism with a vengeance. He arranged for the donation of two brand new Frigidaire refrigerators and a brand new Frigidaire stove for the RO headquarters building. One refrigerator and stove will go into the apartment for Bob Stephens and the second refrigerator will go into the conference room for our all important soda supply. On top of this megabuck donation, John is arranging for a team of Scouts to do a paint job on the apartment. Hopefully by this weekend the interior will be painted and ready for the moving of furniture in anticipation of Bob's arrival.

We have succeeded in bringing in a $13,000 remodelling-outfitting job for less that $10,000. This has been accomplished through donations and the ability to bring together a wide spectrum of resources, volunteers, flexible contractors and willing workers 'on demand'. The job is not quite complete, but I would like to commend everyone who has helped make it possible.

From: Earl W Phillips
Subject: tour, o-seti talk, etc
Date: 24 Jan 1992

I will volunteer to do whatever I can at this event.

[Back to List of Issues in Volume 8] | [Back to List of Volumes] | [HOME]

E-mail Webmaster

Designed by Jerry Ehman
Last modified: February 24, 2004