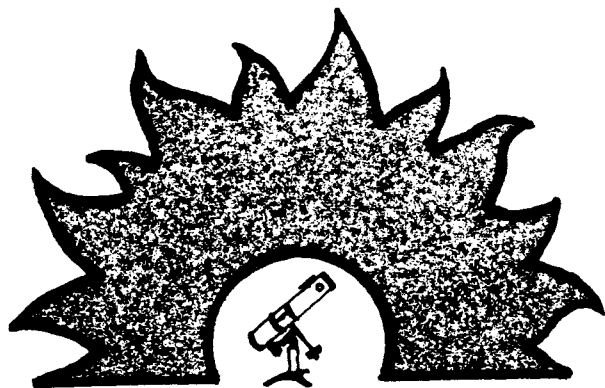




October, 1989

PASTIMES

PHOENIX ASTRONOMICAL SOCIETY -- FOUNDED 1948

**The Next Meeting is October 20th, at Brophy Prep.
(see map on the last page)**

Our meetings are at Brophy Prep. Brophy is located about a quarter mile south of Camelback Road, at the Highland Ave intersection. The meeting will be at **7:00 PM (note time)** in the Physics lab on the second floor.

Dr. Whinsthorst will be giving an interesting and informative talk about Radio Astronomy and the Hubble Space Telescope.

Following Meetings will be November 17th and December 15th.

Public Astronomy Session

There will be a astronomy session for the general public at **Reach 11 Park**, Saturday night, October 7, between 7:00PM and 10:00PM. There will be an entry fee of \$1.00 per person. Come see the stars through telescopes provided by Phoenix Area Astronomy Clubs. See the Moon, Planets, Star Clusters, etc. The park entrance is on **Tatum Blvd**, North of Union Hills Road. (1/4 mile North of the **CAP** canal, on the East side of the road.)

Those of you willing to setup your own scope, please show up between 6:00 and 6:30. Those who bring scopes do not have to pay the entrance fee. The past two events have been well attended.

About Our Speaker...

Dr. Whinsthorst was born in Holland and has a Ph.D. in Radio Astronomy and Cosmology and has worked with Cal Tech. In 1987, he came to ASU to teach Physics and Astronomy. He continues his research in Radio Astronomy in search of distant galaxies. He is also involved with the Space Sciences Institute on the Hubble Space Telescope and is very excited about its prospects.

The Solar Maximum

by Harold Moorin

Earlier this year, new sunspots materialized. They moved westward along the solar surface, evidently colliding with each other, forming loops and jets of particles and radiation - solar flares that spurt miles into space.

Known as the Solar Maximum, this is the climax of an eleven-year cycle of waning and waxing solar activity, such as sunspots, flares and prominences.

Telescopes all over the world are observing changes in the Sun's behaviour, hoping that amassed data will help understand what sparks changes in the Sun and how they effect Earth.

When solar flares increase, magnetic storms increase in both number and intensity. These storms can interfere with communications and disturb power line transmissions.

During a Maximum, the Sun ejects large quantities of high-energy particles that travel about 200 miles per second. These rain down on the Earth's upper atmosphere, above the poles, creating a ghostly light known as the Aurora Borealis which were seen as far south as Arizona and Florida, during the March storms.

The solar cycle is a predictable oscillation in the Sun's activity - an undulation of quiet and busy periods that can vary in intensity from cycle to cycle. The current solar maximum started in January, 1987 and is expected to reach its climax in early 1990.

Astonomers based their forecast of this cycle's unusually high maximum on the number of sunspots, the intensity of magnetic storms during the solar maximum, and the turbulence of solar winds.

For tracking spacecraft, we need to know in advance how active the Sun will be.

MAX 91 was a recently completed observing campaign by solar astonomers using telescopes, high-altitude balloons, rockets, and monitors on the Solar Maximum Mission. They watched changes in ultraviolet, visible, X-ray, gamma ray, radio, and magnetic fields - enough data to keep observers busy until the next solar maximum.

During a solar maximum, sunspots appear and disappear, having temperatures of about only 4000 degrees Kelvin. Sunspot regions of intense magnetic fields and low density usually erupt in groups in specific areas, appearing dark because they are a few thousand degrees cooler than the surrounding surface.

Flares usually spew out most of their energy in the form of radiation. Coronal mass ejections are globs of matter launched from the corona, the outermost layer of the solar atmosphere, which is visible from Earth during solar eclipses.

For Sale / Want Ads

This space is available for the inclusion of Ads that are intended for buying or selling of Astronomical equipment. Send your Ads to Paul Dickson. The deadline is the night of the meeting.

Renewing Memberships

It's that time of year again. Time to round up everyone and get them to rejoin PAS for the new year. Those of you who already have a *Sky & Telescope* subscription can receive a lower membership rate. Otherwise, your *Sky & Telescope* subscription will just be extended. See the application form on the next page. The application is needed by October 31st, to insure no delay with *Sky & Telescope*.

Please make checks payable to **PAS** and bring the application to the meeting or mail it to Keith Parizek at: 3329 E Mescal St., Phoenix, Az 85028. Thank You.

From the Last Meeting...

The first meeting of the **PAS** was a pleasant start of the new year with a presentation by Dr. Peter Wehinger. Mr. Wehinger told us about the detailed data collecting, in depth research and years of presenting theories, tests and results that updates our knowledge we currently have about comets.

Dr. Wehinger began his presentation with a brief history of comet research, leading to his area of interest, Halley's Comet. He shared several spectroscopy graphs, with each layer revealing more and more details into the comets origin. It was discovered that many comets do not have the tell-tale signature of C^{12} / C^{13} ratio of 85:1. Instead, the ratio is 65:1, showing the likelihood that their origins are from beyond our solar system.

The International Halley Watch is winding down, and the final compilation of the data will be made on 25 to 30 Compact Discs.

Planetary Positions

Planets	10/1/89		10/15/89		11/1/89	
	RA	DEC	RA	DEC	RA	DEC
Mercury	11h 46'	+00° 34'	12h 24'	+00° 02'	14h 01'	-11° 09'
Venus	15h 12'	-19° 49'	16h 18'	-24° 06'	17h 39'	-26° 44'
Mars	12h 28'	-02° 10'	13h 02'	-05° 50'	13h 43'	-10° 09'
Jupiter	06h 42'	+22° 49'	06h 46'	+22° 46'	06h 47'	+22° 46'
Saturn	18h 33'	-22° 47'	18h 36'	-22° 46'	18h 40'	-22° 44'
Uranus			18h 08'	-23° 42'		
Neptune			18h 42'	-22° 12'		

JUPITER SATELLITES

OCTOBER 1989

Date	MST	EVENT
Sun 01	12:28 am	II.Ec.D.
	1:54 am	III.Oc.R.
	3:01 am	II.Ec.R.
	3:04 am	II.Oc.D.
	3:49 am	I.Sh.I.
Mon 02	5:07 am	I.Tr.I.
	12:58 am	I.Ec.D.
Mon 02	4:33 am	I.Oc.R.
	11:35 pm	I.Tr.I.
Tue 03	12:11 am	II.Tr.E.
	12:29 am	I.Sh.E.
Tue 03	1:47 am	I.Tr.E.
	11:02 pm	I.Oc.R.
Mon 09	12:25 am	III.Ec.R.
	2:55 am	III.Oc.D.
	3:01 am	II.Ec.D.
	5:35 am	II.Ec.R.
	5:36 am	II.Oc.D.
	5:42 am	I.Sh.I.
	5:51 am	III.Oc.R.
Tue 10	2:52 am	I.Ec.D.
	6:13 am	I.Oc.R.
Wed 11	12:05 am	II.Sh.E.
	12:08 am	II.Tr.I.
	12:11 am	I.Sh.I.
	1:28 am	I.Tr.E.
	2:22 am	I.Sh.E.
	2:47 am	II.Tr.E.
	3:40 am	I.Tr.E.
Thu 12	12:55 am	I.Oc.R.
Mon 16	1:34 am	III.Ec.D.
	4:24 am	III.Ec.R.
	5:35 am	II.Ec.D.
Tue 17	4:46 am	I.Ec.D.
	6:09 am	IV.Tr.I.
Wed 18	12:06 am	II.Sh.I.
	2:04 am	I.Sh.I.
	2:41 am	II.Tr.I.
	2:41 am	II.Sh.E.
	3:19 am	I.Tr.I.
	4:16 am	I.Sh.E.
	5:20 am	II.Tr.E.
	5:31 am	I.Tr.E.

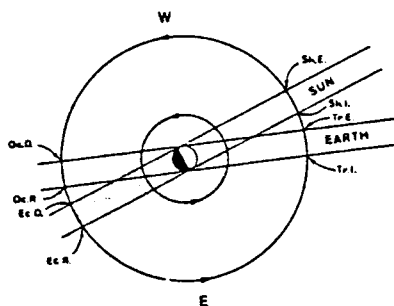
Date	MST	EVENT
Wed 18	11:15 pm	I.Ec.D.
Thu 19	2:47 am	I.Oc.R.
Thu 19	10:44 pm	I.Sh.E.
	11:34 pm	III.Tr.E.
	11:59 pm	II.Oc.R.
	11:59 pm	I.Tr.E.
Sun 22	5:33 am	III.Ec.D.
Tue 24	6:40 am	I.Ec.D.
Wed 25	2:43 am	II.Sh.I.
	3:57 am	I.Sh.I.
	5:09 am	I.Tr.I.
	5:12 am	II.Tr.I.
	5:18 am	II.Sh.E.
Thu 26	6:09 am	I.Sh.E.
	1:09 am	I.Ec.D.
Thu 26	4:38 am	I.Oc.R.
	1:09 am	I.Ec.D.
Thu 26	4:38 am	I.Oc.R.
	10:24 pm	III.Sh.E.
	10:25 pm	I.Sh.I.
	11:37 pm	I.Tr.I.
Fri 27	12:26 am	III.Tr.I.
	12:37 am	I.Sh.E.
	1:49 am	I.Tr.E.
	2:26 am	II.Oc.R.
	3:21 am	III.Tr.E.
Fri 27	11:05 pm	I.Oc.R.
Sat 28	6:00 pm	Stationary
Tue 31	5:19 am	II.Sh.I.
	5:50 am	I.Sh.I.
	6:59 am	I.Tr.I.

I=Io
II=Europa
III=Ganymede
IV=Callisto

Tr=Transit (In front of Jupiter)
Sh=Shadow (Shadow on Jupiter)
Oc=Occultation (Behind Jupiter)
Ec=Eclipse (In Jupiter's Shadow)

I=Ingress (Enter)
E=Egress (Exit)
D=Disappearance
R=Reappearance

II.Ec.D. ==> Europa disappears
into Jupiter's shadow.



Your 1989/1990 PAS officers:

President	Kai Staats	253-3077
Vice President	Mark Johns	866-8311
Secretary/Treasurer	Keith Parizek	996-1013
Newsletter Editor	Paul Dickson	841-7044
Director	Hermann Andreason	997-8759
Director	Dan Heim	482-8133
Director	Dick Wasson	279-0384

Items to be included in the newsletter should be sent to Paul Dickson, 7714 N 36th Ave, Phoenix, Az. 85051. I will try to get them included. -Paul

-----cut---here-----

PAS Application Form

Mail To: Keith Parizek, 3329 E. Mescal St., Phoenix, Az. 85028.

Name: _____

Address: _____

City, Zip code: _____

Phone number: _____

Memberships / Fees (circle one)

	<i>Sky & Telescope</i>	<i>Non- Sky & Telescope</i>
Individual	\$27	\$15
Family	\$29	N/A
Sustaining	\$32	N/A
Student	N/A	\$10

Comments/Suggestions about past meetings: