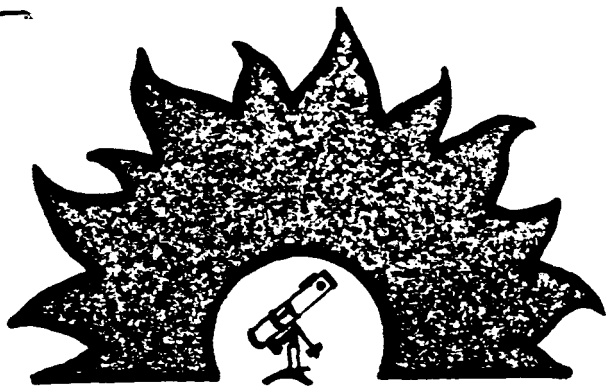




PASTIMES

PHOENIX ASTRONOMICAL SOCIETY -- FOUNDED 1948

* The meeting this month will be held at 7:30 PM, Friday the 24th of *
* March at Phoenix College. Pete Manly will be giving a presentation *
* concerning in town observing techniques. Pete always introduces his *
* audience to the newest innovations and latest information concerning *
* the topic. Keith Parizek will be showing a series of slides that he *
* produced with his equipment up at Alpine. *

* Refreshments will be served throughout the evening. *

The meeting in February was unique with a wide variety of slide presentations. The evening began with Dan Heim presenting his series of slides concerning the Earth/Moon system. Dan re-created a few of the effects of walking on the moon, such as noticing the quick curvature of the horizon. We casually discussed rapid transit on a moon buggy and poked fun at the Flat Earth Society as we observed the beauty of Earth from the orbit of the Space Shuttle.

Bill Robinson intrigued all of us with slide coverage of his astronomical stamp collection. With just a few slides presented as compared to the huge number his collection entails, we were awe struck by the great number of stamps available in the astronomical area. The stamps were artistic, unique from each other, some were extraordinary pieces of art; only a few looked vaguely familiar as common stamps. Each stamp seemed to tell a story or a history and I personally look forward to hearing more from Bill as his collection grows and he expands his slide coverage of his stamp collection.

Raul Espinoza displayed his astrophotographs and pointed out the various conditions which produced the images of Jupiter, Mars and several deep sky objects. It was interesting to notice quality adjustments and differences between the originals and copies of his slides.

Hermann Andresen brought a few of his slides but lacked Raul's \$25 projector that has autofocus, an auto-slide-changer and plays music by its own accord.

Mercury

Let's talk about Mercury, so near and yet so difficult to observe.

Although Mercury is the nearest planet to the Sun, 0.4 A.U. in distance, it is not the hottest. That distinction belongs to Venus. Also, like Venus, it does not have a natural satellite. Furthermore, this planet is very difficult to observe from the Earth because of its apparent path in the heavens. Its rotation period is about 58 Earth days. Its diameter is 4878 kilometers. Its orbital plane is inclined to the elliptic by an angle of 7 degrees. Both the eccentricity and the inclination are greater than any other planet except Pluto. Its temperature varies from 430 degrees Celsius to -170 degrees Celsius.

Mercury has the highest density of any planet except Earth. Iron and nickel are its main constituents, located in its core. The surface is heavily cratered, composed of dusty silicate rock.

Mercury is locked to the Sun, being attracted by gravity, just as the moon is locked to the Earth, known as synchronous rotation. This implies that the periods of rotation and revolution are equal, and that the less massive body would always keep the same face toward the more massive body. A gravitational interlock at work.

When Mariner 10 flew by Mercury in 1975, we learned that it is heavily cratered, similar to the moon. Some scarps appear to be hundred of miles long. The Mariner 10 mission used the gravity of Venus to get to Mercury and then orbited around the Sun every six months to return to Mercury. Mariner reached as close as 300 kilometers, producing photos of high resolution.

Mercury has an all-but-negligible atmosphere, being a few billionths as dense as Earth's. It has traces of helium, oxygen, carbon, argon, nitrogen and xenon. Its gravity is weak as is its magnetic field. Its albedo is about the same as the moon.

by Harold Moorin

Editor's Notes

The April meeting will be the last meeting held at Phoenix College. The May meeting will be held in conjunction with the Saguaro Astronomy Club at Grand Canyon Community College. More information concerning the May meeting will be in the April issue of the PASTimes.

The April meeting will also be the month that votes are cast for next years officers and directors. The nominees will be presented in April's newsletter mentioned above.

The following information was taken from a computer print-out of CANOPUS, presented by the American Institute of Aeronautics and Astronautics.

* * *

Magellan

The Magellan Venus radar mapping spacecraft is on schedule for a launch about the Space Shuttle on April 28, 1989, and has not suffered from a small fire involving a battery a few weeks ago.

Magellan is built from hardware remaining after the Voyager and Viking Projects and borrowed from Galileo. The 3.7 meter high-gain antenna, for example, is from the Voyager backup spacecraft. A number of components were to be taken from Galileo spares, which created an interesting payback problem when Galileo fell behind Magellan in the launch queue.

The primary goals of Magellan are to provide high-resolution imagery and altimetry data of 70 percent of the surface of Venus and resolutions of 120 and 30 meters, respectively. Its secondary mission includes mapping the remaining 30 percent of the surface and providing gravimetric data on the planet interior.

Launch of STS-29 is set for February 18. However, it could be delayed until March 14 without affecting the Magellan launch. All Shuttle launches are at Launch Complex 39-B while repairs and upgrades are made to pad 39-A. The TDRSS is not required for Magellan, but is essential to complete the minimal TDRSS network.

Shuttle boosters

NASA is considering what to do with six flight sets of pre-Challenger boosters that it still has on hand. There is nothing physically wrong with them, other than having the two-O-ring design that allowed the Challenger accident to occur. NASA is trying to decide whether to use them or to burn off the propellant so the casings can be rebuilt to the triple-ring design. They can be flown so long as they are used in warm weather (as shown by the 24 flights that preceded Challenger); strip heaters can be added as a precaution. If that is done, however, it places NASA in the position of justifying the long standdown after the accident.

Cassini/Huygens mission to Saturn

The European Space Agency (ESA) has selected the Cassini/Huygens probe mission to Saturn and Titan as its next major scientific project. Cassini and the Comet Rendezvous/Asteroid Flyby are candidate "new starts" for NASA's fiscal 1990 (original said 1989, but that's an obvious misprint.--SW) budget plan now in the approval cycle at the Office of Management and Budget. The two are being proposed together so that the Mariner Mk. 2 spacecraft can be built in series and at lower cost than if NASA built them separately.

The mission will parallel the Galileo mission to Jupiter in that one spacecraft will orbit the planet and another will make an atmospheric entry. In the case of Cassini, the Huygens probe will enter the atmosphere of Titan, Saturn's methane shrouded moon, discovered by Christian Huygens.

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At the meeting this month there will be several reservation forms for this year's Riverside Telescope Makers' Conference. Be sure not to miss the chance to attend and pick up a form!

Lunar Laughs!

Two astronauts were boxing in the weightlessness of the orbiting spacestation. When the match was over, the one with the black eye exclaimed that he was hit by a guided muscle.

What happens if you swallow Uranium 238?

Answer: you get a-tomic ache ("...what was your reaction to that one?")

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