

Cape Cod Astronomical Society
Minutes of April 7, 2011 Meeting

Attendance: Members: 22 Guests: 6

President Tom Leach opened the meeting at 7:30 P.M. Tom welcomed members and reviewed the latest newsletter. Since our speaker was running late, Bernie Young said a few words about the results from our lunar occultation adventure on March 13th. Mike Hunter praised Bernie's amazing results on his first attempt at collecting and submitting occultation data. Bernie's data had the "lowest error variance" of anyone on the planet for that particular occultation. Applause broke out among the members.

PRESENTATION

Our speaker, Peter Howes is a physicist and optical engineer educated at Tufts University with a masters from Boston College. He spent 13 years heading up restoration of the Air Force Maui Optical Station (AMOS) at Mt. Haleakala in Maui, HI. At an altitude of 10,000 feet, Mt Haleakala is above 80% of the earth's water vapor. The view of the Milky Way is incredible.

Just getting to the site was an adventure. The road was a scary death trap. It was narrow, often icy, with no guardrail. Peter told some humorous stories of wild trips up and down the mountain. If alcohol was involved, it's effects were intensified. A man who had a few drinks at the bottom could be one drunk puppy at the top.

When Peter arrived at Mt. Haleakala in 1969, the site was in very bad repair. Rain had leaked onto the telescopes and computers. Two 48 inch twin casegrain reflectors were sitting cross-eyed. While trying to coat a 60 inch mirror, human error (sigh) caused it to smash to "smithereens". A new mirror of that size took 4-6 months just to cool! Pouring a foundation for the 60 inch scope took 30 truckloads of cement! They were dumping into porous lava, which kept soaking it up.

They had a 24 inch diameter laser at Mt. Haleakala. They were bouncing lasers off mirrors on the moon. It was like Star Wars up there. They also used the laser beam to illuminate satellites for surveillance.

At the Haleakala facility they used radar and optics, passive imaging, photometry and radiometry. Intelligence gathered at Haleakala helped determine what satellites were up there, how they were powered, and what were their capabilities. This was the cold war.

In 1989, the cold war ended, and an era of cooperation in space has since developed. Nations tell each other when they are launching a new satellite, and we don't shoot damaging laser beams at each other's satellites.

The technology is changing rapidly. With old technology, a 200 inch mirror was the largest possible. Now they spin cast mirrors, and they are much larger. The European Extremely Large Telescope at 42 meters, one good example, has enormous light gathering capacity.

Earth-based telescopes have always had limitations because of image "wiggling" caused by Earth's atmosphere. Peter spent some time discussing modern telescopes having large mirrors composed of many tiny cells each of which can flex under the control of computer programs to smooth the images "compensating" for aberrations caused by the atmosphere.

BUSINESS MEETING

Peter Kurtz announced "Astro Jam" at Barnstable High on May 13, 5:30 - 8:00 pm. Free to all "astro-junkies".

Peter also mentioned a 9:30pm occultation Sunday. Plans were to view from the dome, but the weather was not looking favorable. [The event ultimately was cancelled because of clouds.]

Bernie Young announced that we recently got the license for the control program to control the Losmandy from the computer.

Larry Brookhart announced a May opening of the Harwich Observatory at Harwich Elementary School. They have 5 scopes, 3 dobs, a schmidt and a refractor. He will communicate date and time for the grand opening.

Paul Cezanne announced the next Pilgrim Heights date will be April 30, 2 days before a new moon.

Someone from outside the club left a small telescope at the meeting, in the hopes that someone would take it. Someone did.

Tom Leach showed recent NASA APOD (Astro Photo of the Day) photos and videos.

After the meeting adjourned, members and guests were invited to an observing session at the Werner Schmidt Observatory.

The meeting adjourned at 9:30.

Minutes compiled by Gail Smith for Secretary Charles Burke who was unable to attend.

Submitted by
Charles Burke.