

9-71

September 28, 1971

Phone: 489-7651

- - THE PRAIRIE ASTRONOMER - -

The meeting this month will be held in Olin Science Hall at Nebraska Wesleyan University at 7:30 p.m. Two important items on the agenda this time are club elections, and Prof. Moore's first lecture in his adult series on the motions of the planets. Don't miss this meeting; it'll be one of our best.

--The President's Report--

The summer milky way is especially brilliant on these crisp and clear September evenings. It also is well located as it stretches from Perseus in the northeast through Cygnus directly overhead, and on beyond Sagittarius in the southwest.

Many an evening, after looking at some of the choice deep sky objects in my telescope, I just lie back on the lawn and gaze at the majestic expanse above me. At times I look at the summer triangle of Vega, Deneb, and Altair and try to imagine some depth of vision of those three stars and the milky way beyond them. If one really wanted a 3-D view of this scene, he would have to have a separation of at least 100 astronomical units between his eyes. Since this is impossible, I just try to think of Altair as being 16 light years away, Vega at 26 LY, and Deneb at 1000-1500 LY with the milky way reaching to some 50,000 LY or so in the distant background.

Even with all these facts and figures in mind, the stars in the sky all seem to be the same distance away, as if they all were fastened to the surface of some kind of transparent sphere and the milky way at a considerable distance beyond.

I have now considered an experiment, although untried, which would bring this whole thing down to a more realistic scale. Just let one foot represent a light year. Then take some tiny flashlights and drive out to a choice location a few miles north of Lincoln where most of the city lights can be seen from a hilltop. The city lights stretching from southeast to southwest would be the milky way at some 2 - 10 miles, or 10,000 to 50,000 feet distance. There should be no trouble finding one of those 1000 watt farmyard lights. Go about 1/4 mile north of it (1300 feet) and there you have Deneb. Now place a 4-cell flashlight 26 feet away from you and a pen light 16 feet away and these would represent Vega and Altair respectively. With the two flashlights in the proper positions and the farmyard light and the city lights in the background, you should get some idea of the depth of field of the summer triangle and the milky way. Of course, don't expect to see anything like what's really in the sky, but it should give a little better 3-D effect.

I don't expect everyone to rush out on some hilltop overlooking Lincoln scattering flashlights around in a farm field and then standing there watching it all. In fact, if you actually do decide to try this, perhaps discretion might be in order. If someone witnessed this kind of activity, it might take an awfully lot of explanation to the authorities as to why you shouldn't be locked up.

However, just to visualize an experiment like this should help one get a better perspective of the depth of field of the summer triangle and the milky way. The real thing still wins the cigar in any contest though, I think we'll all agree.

---Earl Moser

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--GATEWAY ANNOUNCEMENT--

There is another Gateway Show on Thursday, September 30th, so bring your scope and tell the people about our club.

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--THE SKIES FOR OCTOBER--

Mercury--Both are too close to the sun for good observation this month.
Venus
Mars-----Culminates at 10 p.m. early in the month at magnitude -1.
Jupiter--Early in the month, it is visible in the west an hour after sunset at magnitude -1, but rapidly fades into the sunset as the month progresses.
Saturn---Rises at 10 p.m. about 8 degrees east of the Pleides; a prominent zero magnitude object near Aldebaran.
Uranus & Neptune are not favorably placed for observing this month.

MARS 1971

In July and August of this year, the red planet Mars came closer to the earth than at any time since 1924, thus affording astronomers a uniquely good view of its surface. Not only professional astronomers were watching either. Early in September, I had the pleasure of viewing this phenomenon personally through the club 12½ incher.

May I say at this point that I had never really seen the surface of Mars before since the telescopes I have owned through the years were small and of dubious quality. The moons of Jupiter and the ring around Saturn were old familiar personal sights to me, but the surface of Mars I had only read about and looked at photos taken by others. Mars was not a conquest of mine until that first week in September. I knew that it was beginning to recede from the earth and if I were to see it in its excellent position, I'd have to make it "now or never," or at least wait another 47 years.

I went to Hickman that night, knowing pretty well what I would see, and as I trained the big scope on the brightest object in the sky, Earl began apologizing for the unsteadiness of the atmosphere that night. I don't know what magnification I was using for sure, but somewhere around 500X was all the air would allow.

At first I was disappointed in what I saw, or rather didn't see. Under low power, the image was bright, sharp, steady, and too small to allow any detail to be visible. High power produced a basketball sized image which appeared murky, indistinct, and in constant motion from the unsteady air that night. I chose a medium-high power after a few discouraging moments and began to study the image of Mars as it swam across the field of vision.

All at once and for only a second, the air steadied and I got a good look at the planet's surface. I was amazed, and continued to scrutinize the image hoping the same thing would happen again. After a minute or two, it did, and I got another glimpse of Mars' surface with some real detail. Fascinating, and rather satisfying after all these years.

The polar cap was a brilliant white, but very small, appearing to cover only about 5% of the surface. The majority of the planet is a light orange color, and scrawled across its face were the so-called canals making an outline vaguely resembling the continents of Asia and Europe joined in their normal Rand-McNally way. After I knew what I was looking at, each time I got another clear, sharp glimpse, I saw something I had missed the time before. I'm sure that the last glimpse I got was no better than the first, but I could see a lot of real detail half an hour after I started observing that I could not be sure of 30 minutes before. I discovered Mars the only way any observer really can--with my own eyes.

By the way, that telescope is still down there in Hickman waiting for the membership to discover it. You all helped pay for this fine instrument, and Earl loves company just about any hours of the night. Why not avail yourself of the benefits of your club; an organization which many communities lack and we are fortunate to have.

--Lawrence Pilgram

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Don't forget--come hear the first of Professor Moore's planetarium lectures for adults at the upcoming meeting. Here's something you really shouldn't miss, so don't be late. See you there?