July 1985

Upcoming meetings:

At the last meeting, Raymond Lent presented a talk on Halley's Comet, and gave information on its history, past appearances, and what can be expected during this appearance. The turnout was even larger than expected, limiting the view for many attending. Fortunately, the problems of limited space may be behind us. We now have a permanent location for our club meetings: Room 185 in the Physics and Astronomy Building at the University of New Mexico, located at the northeast corner of the intersection of Lomas and Yale.

The meeting for June will be on Friday, July 12, at 7:30 p.m. The subject matter is unknown at press time.

Since we will no longer meet in members' homes, the refreshment committee will now become active. Debbie Woodward and Sue Lampson will be contacting club members to ask them to bring snacks, drinks, or utensils. If anyone would like to volunteer, please contact Debbie or Sue to make arrangements. Your cooperation will be greatly appreciated.

The junior astronomy club meets regularly the third Friday of the month at the New Futures School at 2120 Louisiana NE (corner of Louisiana and Indian School). The meeting starts at 7:00 p.m. in the history classroom (main building, first room on the left as you enter). This month's meeting will be on July 19. For more information, contact Jim Palmer at 299-7955.

The tour of the VLA has been finalized. The club will meet at the VLA visitor's center just before 2:00 p.m. on Saturday, July 13. That night a campout is planned, followed by a tour of the Atmospheric Research Laboratory on Sunday.

FLASH!! THIS MEETING'S SPEAKER IS RAUL CAMPOS-MARQUETTI, ON THE 'SOUTH POLAR REGIONS OF MARS.' HE IS A GEOLOGIST, DID HIS THESIS ON THIS TOPIC, WORKING WITH SAGAN.
Direct from Kathy Hedges on the VLA tour:

**Note:** The plans have been revised so we will be staying at an organized campground with restrooms and running water. This should make the trip more comfortable.

1) We will receive a guided tour with Dr. Pat Crane, VLA Systems Scientist. We will start off at the main visitors' building with the introductory slide show on the VLA at 2:00 p.m., and he will take us around afterward. **Plan to be at the visitors' building before 2:00 p.m., Saturday, July 19.**

2) How to get to the VLA: Drive south on I-85 to Socorro and take Route 60 west toward Magdelena and Datil. Signs will guide you to the VLA Visitors' Center. Socorro is 75 miles south of Albuquerque, and the VLA is 60 miles from Socorro. Plan to eat lunch before you reach to VLA site, as they have no eating facilities for visitors.

3) A group of us will gather in Socorro for a picnic lunch from 11:30 to 12:30 p.m. All are welcome. Meet in Seldillo Park. Take the first freeway exit for Socorro, pass the first few businesses; turn right immediately after the Chevron station, at the state historical sign that says "Socorro," go a few hundred yards along the road; park on left after the firehouse (prefab light brown building on left).

4) After the tour, we will proceed to Datil, west on Route 60, for dinner and camping at the Datil Wells Campground. The club is taking our host, Pat Crane, to dinner at the Datil Steakhouse. All members are welcome at this dinner. If you are coming, call Bruce Levin at 899-0891 by July 11 (we need to warn the restaurant). If you prefer to eat at the campground, grills are available — bring charcoal.

5) The campground has: water, tables, shelters, grills, and restrooms; but no showers. There is no electricity available for telescopes, so bring a converter if you need one. Also bring: insect repellent, sun protection, spare TP, warm clothes (we'll be at over 7000 ft.), and anything else you like to have while camping.

6) If you prefer not to camp, the same people who run the steakhouse also run a motel, the Eagle Guest Ranch. Call 778-5612 for reservations.

7) On Sunday, we will visit Langmuir Laboratory for Atmospheric Research in the mountains near Socorro. The lab does research on the physics of thunder-storms. The road to it is a dirt-surfaced Forest Service road, and four-wheel drive vehicles are recommended. We will consolidate into a convenient number of vehicles before we go up the mountain.

8) By the time we are back down from Langmuir, it will probably be late afternoon. Those of us who have survived may either eat in Socorro or head back to Albuquerque.
Those club members who would like to caravan down to Socorro and the picnic lunch should meet by the self-service post office in Winrock Center. Plan to meet at 9:15 a.m. and depart at 9:30 a.m.

Also, it would be nice if those who are going would call Bruce Levin or Steve Snider (but not both) and advise on the number who are planning to attend so we can give Pat Crane some warning on how many he will have to deal with. If you don’t know until the last minute, no problem, please come. This is definitely not a mandatory head count.

The next star party will be at the campground during the evening following the VLA tour. The last star party was “raided” in that the tribal police said the club had to leave the Jemez Dam because it did not have a permit for staying after dark. Apparently they have been having trouble with litter, beer cans, etc. from people and instituted the permits in an effort to control it. Unfortunately, we didn’t know about it ahead of time. Steve Snider does now have the information on who to contact for the permit, and we may still go there in the future. Also, if anyone plans on arranging their “own” star party at the dam, contact Steve for information on the permit.

Club members can get a free International Halley’s Watch Bulletin by writing:
IHW Amatuer Observers Bulletin
c/o Steve Edburg
Planetary Society
110 S. Euclid Ave
Pasadena, CA 91101

Two or three people have expressed an interest in the Halley Watch. At the next meeting, Steve Snider will have some copies of additional information available for those who are interested.

We also have a communication (i.e. handwritten letter on yellow paper) from clubmember Jay Miller:

A quick note: the Space Shuttle mission with John-David Bartoe and Dr Tony England, mission 51-F, is scheduled for late July 1985. One of the members in the club, Dave Eckhardt, talked to Dr. Owen Garriott in STS-9. I have noticed that several members in the astronomy club are also hams: Gerald Boyd, Brett Coningham, Dave Eckhardt, Bill Wampler, and myself. There are probably others, but I don’t recognize them. We will attempt a visual siting of 51-F if possible. Keplerian elements and tracking information will be obtainable on the 147.15 MHz FM repeater, after the mission is underway.

I also have tracking data for Halley’s Comet in case anyone is interested. The easiest way to reach me is at work at 845-4471 ext. 8108 if there are any questions.
Basic Astronomical Information
(from A Companion Guidebook For Galactic Travelers, Tomas J. Filsinger, Hallmark Cards, Inc., Kansas City, MO, 1983)

The Constellations

The constellations are imaginary figures projected onto the stars. Groups of bright stars have been recognized and named since ancient times. The Babylonians projected their gods onto the heavens in the shapes of the Ram, the Bull, the Crab, the Lion, the Scorpion, the Fish, and so on. Greek mythology has contributed such figures as Hercules, Andromeda, Perseus, and Orion. Some constellations seem to be in the form of objects — Libra (scales) and Corona (a crown). And some, as you might deduce by reading their names, have been designated in modern times.

There are many ancient stories about the stars and constellations. For example, the myth of Orion the Hunter can be seen against the great stage of the heavens. Orion, accompanied by the Big Dog and the Little Dog, used to boast that no game could escape him. This annoyed the goddess Juno, so one day while Orion was chasing a hare, she had a scorpion sting his heel. The sting was fatal — Orion died.

All these creatures were put into the sky among the stars — Orion and his dogs (Canis major and minor); Lepus, the hare; and Scorpio, the scorpion that stung him. As a precaution, the Archer (Sagittarius) was posted near Scorpio, and Orion and the scorpion were placed in opposite part of the sky so that they could never again cause trouble. Orion is visible in winter; Scorpio in summer. When one rises, the other sets. If you would like to know more about the history of these and other constellations, you will find many books in the library filled the the ancient lore of the constellations.

The Zodiac

The zodiac (literally, "animal circle") is the band of twelve constellations along the ecliptic. The first sign of the zodiac is, by definition, the constellation in which the sun appears on the first day of spring. Two thousand years ago, this constellation was Aries, so this group of stars was designated the first "house" of the zodiac. But, like every phenomenon, this too is always changing, moving a fraction of a degree every year. Now, the vernal equinox occurs at the end of Pisces, near the first point of Aquarius. This is what is meant when it is said that we are entering the "Age of Aquarius." This movement has resulted in a discrepancy between the dates assigned to astrological tables and true astronomical dates.

A Simple Description of Cosmic Phenomena

The stars, the earth, water, air, our bodies — everything is made of the same basic stuff — atoms. Just as the solar system has a sun at its center with planets spinning around it, so atoms have a center, composed of protons and neutrons, with tiny specks of matter called electrons spinning around in their orbits. Stars are born out of clouds of gas, called nebulae, which are composed of hydrogen, the simplest and most abundant element in the universe. Hydrogen has only one proton and one electron.

When a cloud of this gas begins contracting because of gravity or because of the spin of the galaxy, its density increases and the temperature and pressure rise. The atoms in the center (or centers) of the cloud are pushed closer and closer together. There comes a point when the atoms are so close together that there is no space left for the spinning electrons, and the atoms break up and reunite in the form of helium. This
element contains two protons, two neutrons, and two electrons. This conversion saves space, since it takes four hydrogen atoms to make one helium atom. This conversion also creates a tremendous amount of energy, marking the birth of a star.

<table>
<thead>
<tr>
<th>Constellation</th>
<th>Symbol</th>
<th>Name</th>
<th>Sign</th>
<th>Symbol</th>
<th>Old Astrological Dates</th>
<th>Astronomical Dates</th>
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<tbody>
<tr>
<td>ANDROMEDA</td>
<td></td>
<td></td>
<td>PISCES</td>
<td>Fish</td>
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<td>21 March - 21 April</td>
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<tr>
<td>AURIGA</td>
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<td></td>
<td>ARIES</td>
<td>Ram</td>
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<td>21 April - 22 May</td>
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<tr>
<td>GLAESER</td>
<td></td>
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<td>TAURUS</td>
<td>Bull</td>
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<td>22 May - 21 June</td>
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<td>CARINA</td>
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<td>GEMINI</td>
<td>Twins</td>
<td>22 May - 21 June</td>
<td>21 June - 22 July</td>
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<tr>
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<td>CANCER</td>
<td>Crab</td>
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<td>22 July - 22 Aug.</td>
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<td>CRAB</td>
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<td>LEO</td>
<td>Lion</td>
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<td>AQUARIUS</td>
<td>Water Bearer</td>
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*These constellations are in the modern heavens beyond 60° north, and do not appear on this map.*

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**UNM Physics + Astronomy Building, Room 185**

**Friday, July 12, 7:30 pm**

Park in Back Parking Lot  **Next Aug 3rd**