



Longmont Astronomical Society
July 2003

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The View From Up Here

Dear members and friends,

Hope you all had a great 4th of July weekend! Longmont had another great fireworks show, and the next night we enjoyed Mother Nature's light show at Flanders Park! And later in the evening we had to endure lights of another sort...

This month, we not only had another good member turnout, but due to the announcement in the paper, we had quite a number of general public-type visitors as well! It was a lot of fun doing good ol' public education again – it's so much fun to see the reactions people have to seeing things through a telescope for the first time!

The weather was great, and as it a pretty clear night, we hung out later than normal in order to soak up some Martian photons. Sometime between 11:30 and midnight, I was lining up the 13 when all of a sudden white lights hit us all in the face. Of course, my immediate reaction was to cover my eyes and yell at the uneducated intruders to TURN OFF THE LIGHTS!!! I then learned that Longmont Police Officers don't respond immediately to that sort of request!!

After being duly informed that the park was closed and that they received noise complaints (which I promptly blamed on the party going on at a nearby house), we explained that we were permitted to be there, and dropped the appropriate names, etc, and everything became quite cordial. Especially after certain official firearms were re-holstered. Maybe you can imagine their consternation in seeing 2 "cannons" set up in the park....

Well, based on a large number of somewhat similar encounters over the years, I have found that the first, best thing to do in this situation is to offer the officers views of what you're looking at. It never fails to thaw the ice. The 3 officers stayed and gazed for about a half hour! The first thing I showed them was the Ring Nebula... leave it Roy Martens to remark that the first object I show a cop is a "donut"!!! I don't know – I must have been picking up on their vibes or something! They stayed until they were summoned away on another disturbance call!

REMEMBER: Mark your calendars for Saturday, August 2nd at Flanders at 4:00 for our 1st quarter Star-b-que and public observing. LAS will provide burgers and dogs – bring your scopes and a dish to pass. This will be a fun evening. Until then – have fun and stay out of trouble!

Clear Skies,

Bob Spohn
President

Calendar

July

WUTS Fox Park 7/24-26 - New moon 7/29

August

Star Party Flanders 8/02 - LAS meeting 8/21 – Star Party Fox Park 8/23 - New moon 8/27 – Star Party Flanders 8/30

September

LAS meeting 9/18- New moon 9/26 – Star Party Pawnee 9/27

October

Star Party Flanders 10/04 - LAS meeting 10/16 - New moon & Star Party Pawnee 10/25

November

Star Party Flanders 11/01 - LAS meeting 11/20 – Star Party Pawnee 11/22 - New moon 11/23 – Star Party Flanders 11/29

December

LAS meeting 12/18 – Star Party Pawnee 12/20 - New moon 12/23

Calling all Amateur Astronomers!

Take this opportunity to complete the new online survey supported by Astronomical Society of the Pacific (ASP) and have a chance to win a \$100 gift certificate to the ASP Catalog!

You will be assisting in developing training and materials for amateur astronomers to help the public understand concepts of astronomy. In addition, the survey is collecting your experiences with any astronomy misconceptions you have come across in your encounters with the public. Click on this link to access the survey:

<http://fs8.formsite.com/astrosociety/AstroSurvey/index.html>

Or from the ASP web site: <http://www.astrosociety.org/>

As an added bonus, if 15 or more of your club members respond to the survey, you will receive a copy of your club's responses (no names or other identifiers will be included). This could help in planning programs for your club and can serve as a topic of discussion at a club meeting. Just have your members put your club's full name on the form where they enter their name for the drawing.

We're expecting to close the survey by the end of July or August and will distribute club responses within six to eight weeks after that.

To find out more about the survey and to access it, click on this link:

<http://fs8.formsite.com/astrosociety/AstroSurvey/index.html>

Thank you for your participation and your contribution to research in amateur astronomy outreach!

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Report from RMSS

Hello all you starship dreamers!

We just got back from star gazing event, RMSS.

Three beautiful nights under the stars at 8600feet elevation, for some of the best dark sky anywhere except maybe Fox Park, Wyoming. I love the huge valley they have it in. Beautiful full sky views in the Rockies. We had over 325 people for one of the biggest events for the Rocky Mountain Star Stare. Many great scopes to view from big dob valley as I called it. The Amateur Telescope Makers walk about was way cool as usual and Jim Sapp once again stunned the masses with his spectrograph scope he built out of old beer cans a pair of reading glasses and miscellaneous off the shelf stuff. Jim emptied the cans first, and still was able to build this spectrograph, just kidding. Jim is also still amazing us with his ATM work. New member and friend Terry Frazier, war vet, you too also amaze me, wish other people in this world had even half your gumption, or get up and go you have, you could teach a few armchair astronomy people on how to apply yourself.

I always want to share the pictures so here I go again, keeping it cosmic Tom, wish you could have been there, bye, aperturemon

Gary Garzone



Solar Flares



RMSS Give Away



RMSS Rainbow



30 bright sunset



30 ready to go



ATM Walk about



Mars



Jupiter

Report from Fox Park

Jim Crane and I ventured north of the border Saturday and arrived at Fox Park. Even though the clear sky clock for Fox Park indicated overcast by 11 PM, the afternoon looked great and we went for it.

Well the clear sky clock was off by about 45 minutes. I clouded over about 10:15 PM. There were nice sucker holes that we took advantage of, but as the night progressed, they became less and less.

I packed my scope up and Jim and I swung his 10 inch scope around chasing the few remaining sucker holes. By about 11:30PM, the sky fogged over completely and we woke up to a morning fog.

Mosquitoes were on the attack. Deep Woods Off kept them at bay but they were persistent. About an hour after sunset they were all gone.

This past weekend the amateur radio people of the world had a relay party. There were several radio guys up at Fox Park, talking all night. Found out that Jim Crane is also one of these guys. These people are weird. They introduce themselves as "Hi, I'm Jim QU1AB. Hi, I Reb, J1G4D" ???

Most people use their last names....

Michael Hotka

Light pollution??



Some announcements

Denver Museum of Nature & Science Space Science Events

Saturday, July 19 – Sunday, July 20

Astronomy Campout

6:30 P.M.–9:00 A.M.

Cost is \$40 for members, \$50 for nonmembers, \$20 for children, ages 6–13

Join DMNS astronomy educators for a fun evening under the stars at the Jefferson County Outdoor Lab School Observatory. Camp, hear astronomy lectures, and observe the heavens using various telescopes throughout the night. The Museum will provide hot beverages, punch, and snacks. Participants provide their own camping gear and, due to the drought, cold meals only. Rest rooms and water are available on-site. Details sent with confirmation. An adult must accompany children under 18. Call 303-322-7009 for reservations.

Friday, July 25

60 Minutes in Space: Beyond the Headlines

Curator from the Department of Space Sciences

7:00 P.M., VIP Room, Denver Museum of Nature & Science

Cost is \$7 for members, \$10 for nonmembers, \$5 for students

Dr. Laura Danly, Dr. Steve Lee, and/or Dr. Dimitri Klebe will take you behind the headlines and give you the spicy details of breaking news in space science. Find out what's happening in the cosmos with up-to-the-minute reports of breakthroughs and events in astronomy and space exploration. Call 303-322-7009 for reservations.

Upcoming Lectures

Wednesday, August 6

Digital Soul: Intelligent Machines and Human Values

7:00 P.M.

Ricketson Auditorium

Cost is \$10 for members, \$13 nonmembers, \$8 for students

Scientists predict that computer intelligence will rival our own in about 30 years. Dr. Thomas Georges, a physicist and award-winning science writer, examines how the emergence of intelligent machines could cause us to rethink many of our values in his new book "Digital Soul". Book sale and signing follow the lecture.

Wednesday, August 13

The New Mars

7:00 P.M.

Ricketson Auditorium

Cost is \$10 for members, \$13 for nonmembers, \$8 for students

Dr. Michael Malin, principal investigator for the Mars Orbiter Camera on the Mars Global Surveyor mission, discusses how this remarkable mission has revolutionized our understanding of the Red Planet since it began orbiting Mars in September 1997.

Thursday, August 21

A Traveler's Guide to Mars

7:00 P.M.

Ricketson Auditorium

Cost is \$10 for members, \$13 for nonmembers, \$8 for students

Dr. William K. Hartmann, participating scientist in the U.S. Mars Global Surveyor Mission, explores the wonders featured in his new book "A Traveler's Guide to Mars" including mysterious dry riverbeds, a

volcano three times higher than Mt. Everest, and giant impact craters. Book sale and signing follow the lecture.

Upcoming Trips

Friday, August 8-Saturday, August 9
Saturday, August 9-Sunday, August 10

Perseids Astronomy Campout

6:30 P.M.– 9:00 A.M.

Cost is \$40 for members, \$50 for nonmembers, \$20 for children ages 6–12

Join DMNS astronomy educators for a fun evening under the stars at the Jefferson County Outdoor Lab School Observatory. The Perseids Meteor Shower will be visible during both of these nights! The Museum will provide hot beverages, punch, and snacks. Participants provide their own camping gear and, due to the drought, cold meals only. Rest rooms and water are available on-site. Details sent with confirmation. An adult must accompany children under 18. Call 303-322-7009 for reservations.

Wednesday, August 20

Jim's Mobile: Travel Through Telescopes

10:00 A.M. –Noon

Cost is \$12 for member, \$16 for nonmember

On a visit to Jim's Mobile, Inc. in Lakewood, learn the mechanisms for operation and techniques for creating telescopes and other amateur astronomy equipment. For ages 12 and up.

Friday, September 19–Sunday, September 21

Stargazer's Weekend

YMCA Snow Mountain Ranch near Winter Park

Cost: \$260–\$275 includes program, meals, two nights' lodging. Book before July 18 and save!

Join DMNS astronomers and local space science researchers for our third annual Stargazer's Weekend. The theme will be the top stories of 2003. This weekend offers something for everyone, from novice to serious amateur. Call to receive a brochure (303-370-8335).

Saturday, July 12

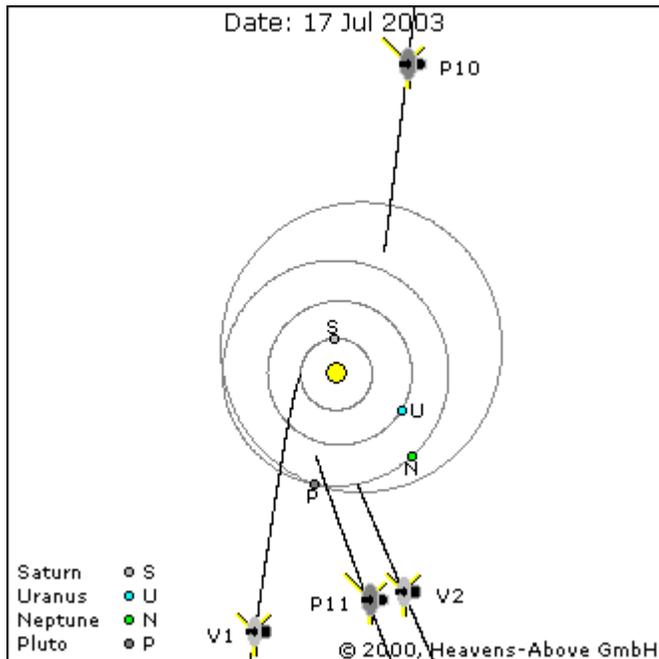
Denver Astronomical Society Open House

Chamberlain Observatory, DU Campus

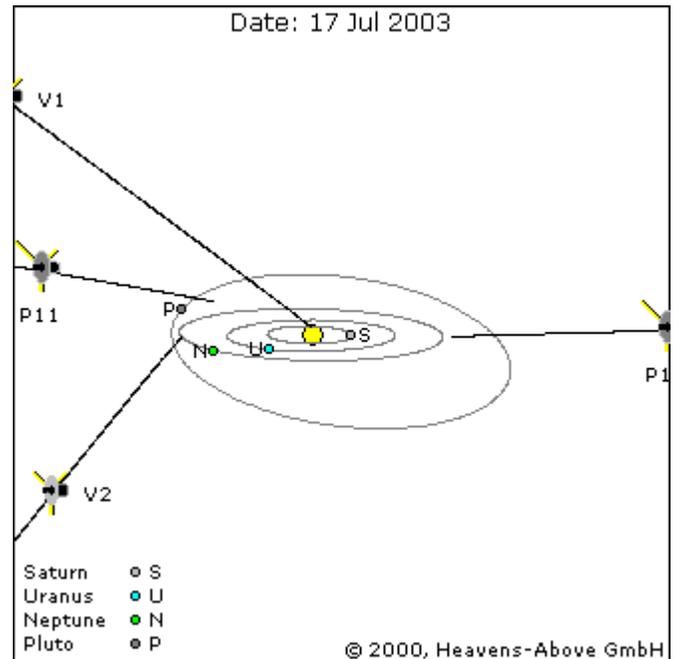
An Open House will begin at dusk at the Chamberlin Observatory, 2930 Warren Avenue, Denver. The event is free. Visit www.denverastrosociety.org for more information.

Spacecraft escaping the Solar System

This page shows the current positions and other interesting data of the four spacecraft which are leaving the Solar System on escape trajectories - our first emissaries to the stars. The graphics and data table are generated dynamically and so always represent the latest positions.



View of orbit from above ecliptic plane



View from 10 degrees above ecliptic plane

	Pioneer 10	Pioneer 11	Voyager 2	Voyager 1
Distance from Sun (AU)	83.382	64.569	70.746	88.955
Speed relative to Sun (km/s)	12.228	11.677	15.669	17.200
Speed relative to Sun (AU/year)	2.580	2.463	3.305	3.628
Ecliptic Latitude	3.0°	14.7°	-28.6°	34.7°
Declination (J2000)	25.79°	-8.49°	-50.58°	12.11°
Right Ascension (J2000)	5.027 hrs	18.530 hrs	19.601 hrs	17.035 hrs
Constellation	Tau	Sct	Tel	Oph
Distance from Earth (AU)	84.186	63.628	69.863	88.337
One-way light time (hours)	11.67	8.82	9.68	12.24
Magnitude of Sun from spacecraft	-17.1	-17.6	-17.5	-17.0
Spacecraft still functioning ?	No	No	Yes	Yes
Launch date	Mar 3, 1972	Apr 6, 1973	Aug 20, 1977	Sep 5, 1977

For current information visit the following web site:

<http://heavens-above.com/solar-escape.asp?>

Constellation of the month

In Greek mythology, Scorpius is the scorpion that killed Orion. The two constellations are set at opposite sides of the sky, to avoid further trouble between them.

A beautiful constellation of the zodiac, filled with bright stars and rich star fields of the Milky Way, Scorpius really looks like a scorpion, complete with head and stinger. Near the northern end is a line of three bright stars with red Antares (Greek for “rival of Mars”) at its center. Some 5,000 years ago, the Persians thought of Antares as one of the Royal Stars, a guardian of heaven. The ancient Chinese referred to Antares’s red glow as the “Great Fire” at the heart of the Dragon of the East. Another Chinese legend refers to Antares and its two attendants as the Ming T’ang – The “Hall of Light” or the “Emperor’s council Hall”.

Antares: The Romans called this mighty star Cor Scorpionis, meaning “heart of the Scorpion”, a title the French also use – Le Coeur du Scorpion. Thought to be 520 light years away, Antares is a red supergiant some 600 million miles (1,000 million km) across and is 9,000 times more luminous than our Sun. However, with a mass only 10 to 15 times that of our Sun, it is not very dense. Its insides might be like a very hot vacuum.

Beta (β) Scorpii: This is a double star whose 2.6 and 4.9 magnitude components are 13.5 arc seconds apart, making resolution possible with a 2 inch (50mm) telescope.

M 4: “There are several M 4s”, said Walter Scott Houston, a highly insightful observer who died in 1993 at the age of 81. What he meant was that this strange globular cluster has a different appearance with each instrument you use. Binoculars show a fuzzy patch of light; a small telescope shows a large patch of mottled light; and a 4 to 6 inch telescope (100 to 150 mm) instruments begin to show individual stars. This is one of the best globulars for viewing in small telescopes.

The Butterfly Cluster (M 6): The stars of this large, bright open cluster really resemble a butterfly when they are viewed at high power.

M 7: This large, bright open cluster, lying southeast of M 6, needs to be seen through the large field of view of binoculars to be fully appreciated.

NGC 6231: Half a degree of Zeta Scorpii, this bright open cluster lies in a rich region of the Milky Way. It is best surveyed in binoculars or at a very low power in a telescope.

M 80: This small, bright globular cluster can be seen in binoculars but needs a 10 inch (250 mm) telescope to resolve its stars.

Scorpius X-1: This is a close binary star in which one star expels gas onto a dense neighbor which could be a white dwarf, a neutron star, or a black hole. It is a bright X-ray source, but appears visually as a faint 13th magnitude star.

Object Name Type/Translation V Mag

- 1 M6 Open Star Cluster
- 2 M7 Open Star Cluster
- 3 M80 Globular Star Cluster
- 4 M4 Globular Star Cluster
- 5 Antares "Rival of Mars" 0.96
- 6 Graffias "Crab" 2.62
- 7 Dschubba "Forehead" 2.32
- 8 Sargas * 1.87
- 9 Shaula "Raised Tail" 1.63
- 10 Jabbah "Forehead" 4.01
- 11 Alniyat "Shield of the Heart" 2.89
- 12 Lesath "Stinger" 2.69

