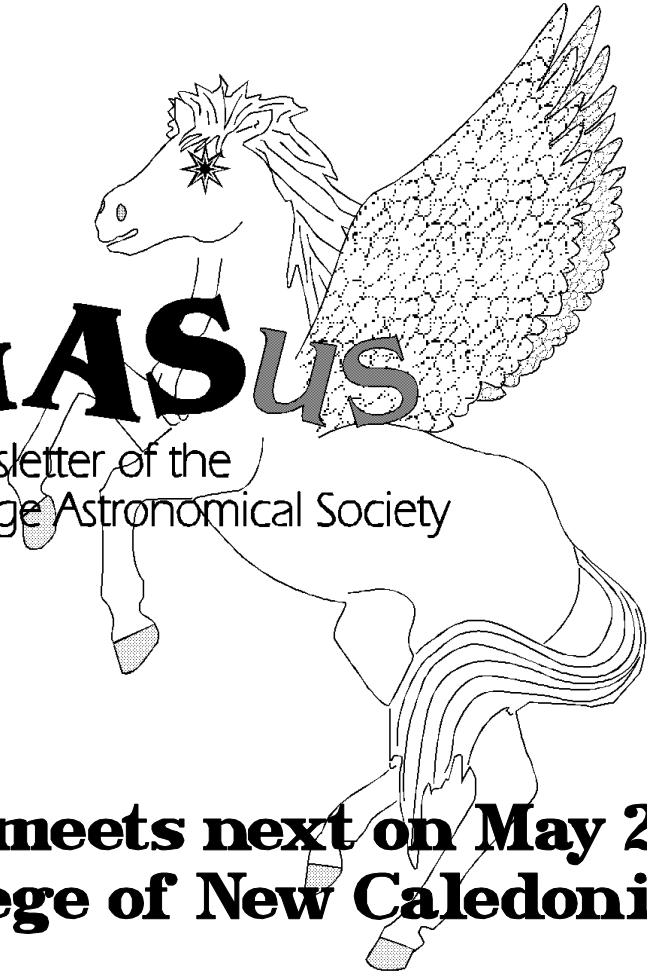


May 1994

Issue #48

the
PeGASus

Newsletter of the
The Prince George Astronomical Society



**The PGAS meets next on May 25
at the College of New Caledonia**

INSIDE :

Editorial Comments	3
Monthly Meetings	4
PGAS Mailing List	5
Solar Eclipse	6
Recent PGAD Visitations	7
Wonders Never Cease	10
Starlab is Coming!	13
Recommended Videos	15

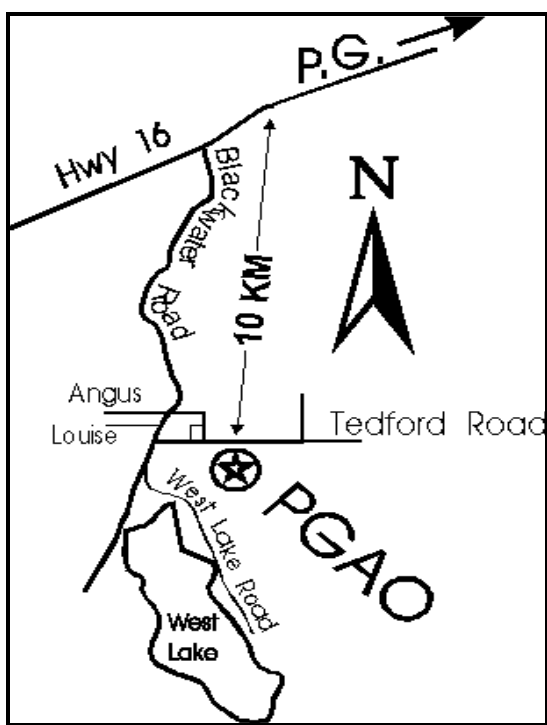


PeGASus

is published monthly by the Prince George Astronomical Society. Contributions to the newsletter are welcome.

**Deadline for the
June issue is
Friday, June 17**

Send correspondence to:
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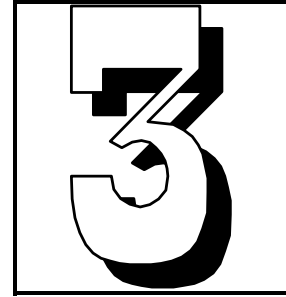
Shannon Austman

Librarian

We need one!

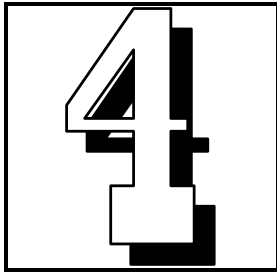
The Observatory phone number is 964-3600. This is a party line, so if it rings busy, it does not imply that someone is at the observatory.

Editorial Comments



It looks like the PGAS is going to have a busy summer. We are trying to keep the observatory open every Friday and Saturday evening for public access, regardless the weather. This will be a good time for members to visit the observatory as well, especially if you have not been out there recently. On Canada Day I hope to have our solar viewing station down at Fort George Park once again. If you recall, last year we built a booth (as part of the PeGASus Project) to display our posters, post cards, T-Shirts and telescopes. On July 5, the MacMillan Planetarium is bringing its Astronomy Road Show to Prince George, and we hope to put on an afternoon/evening observing session at the Fraser-Fort George Regional Museum with this group. The article '*Starlab is Coming*' on page 13 of this newsletter gives the details of this event. Over the summer, construction will continue at the observatory to make the facility more functional and usable. Helping out at the observatory is a good relaxing way to spend your summer vacation. Lastly, the Perseids will arrive again in August, and I hope that we will have another successful Perseid Shower Party ... under clear skies this time.

I apologize for the omission of the regular article '*In The Sky*' by Al Whitman. Alan is away chasing tornadoes this month, and I ran out of energy and information before I got to that part of the newsletter. Hopefully, Al will be back next month.



Monthly Meetings

The next meeting of the PGAS will be held at CNC in the Physics Laboratory (room 2-223) on May 25th starting 7:30 PM.

This month's meeting will feature **Alan Whitman** talking about the *Mount Kaubol Star Party*. This is an annual event held in August. If you are interested in attending this event and representing the PGAS, you should come and hear Al's talk. Al is a great speaker and always comes prepared with many wonderful slides of his adventures. Alan also had the opportunity to observe the May 10th Solar Eclipse from a better vantage point than Prince George while he was chasing tornados south of the border. Hopefully, he will have time to give us some juicy details of both the eclipse and the tornados.

Last month **Jennifer Whitman** gave a wonderful presentation on *Finding the Speed of Light using Roemer's Method*. This method involves getting out of bed at odd hours of the night and making observations of the transit times (or some other event) of the moons of Jupiter. Jennifer won first prize in her school science fair, and next year she hopes to have more data when she takes the project to the nationals (after winning the regional fair at CNC).

Also at last month's meeting, **Matthew Burke** talked about the upcoming collision of Shumaker-Levy 9 with Jupiter. For a summary of Matthew's talk, see the last issue of the PeGASus. Matthew also showed some great colour laser jet images from the Hubble telescope. If you are interested in obtaining some of these print-outs, you will have to suck up to Mat.

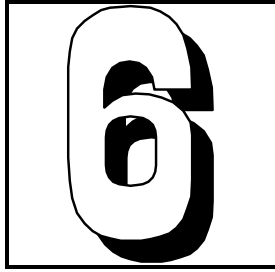
PGAS Mailing List



Here is an updated PGAS mailing list. It is a composite of members, friends, neighbours, possible members, and promotional contacts.

First	Last	W.Phone	H.Phone	Membership	Key #
1. Orla & Shannon	Aaquist	562-2131	964-9626	family	8
2. Art	Beaumont		564-4077	possible	
3. Fred	Berekoff		964-6309	family	
4. Ted	Biech	562-2131	564-2838	regular	4
5. Gerhard	Bierman		563-0578	regular	
6. Peter, Jon, Steve	Bowen	563-0161	563-9869	family	3,6
7. Elizabaeth Anne	Bozok		563-1285	regular	
8. Chris	Brougham		564-7965	regular	
9. Matthew	Burke		563-2162	regular	10
10. Drew	Chisholm	962-9271	964-3546	regular	
11. Al	Davidson		564-3436	regular	
12. Terence	Farnham	563-5739	564-6823	regular	
13. Robert	Frith		562-0053	regular	
14. Robb	Fry	562-2131	564-8640	regular	
15. Don	Goldie		564-8536	regular	9
16. Les	Griffiths		563-4415	new	
17. Eric, Barb, Mike	Hansen	563-3731	962-7477	family	
18. Vince	Hogan		563-4383	regular	
19. Ahmed	Hussein	960-6622		regular	
20. Birch	Howard		968-4410	Possible	
21. Don	Jacquest		692-7924	friend	
22. Lee & Kelley	Keener	960-6639	962-2533	family	
23. Dave	Kubert		964-9503	regular	
24. Tom	Laing		964-0617	neighbour	
25. Mike	Lancelot		562-3546	regular	
26. Neil	Lauder	565-6090	564-1623	regular	
27. Jim	Livingstone		964-4370	regular	2
28. Howard & Michael	Lockhart		964-0897	family	
29. Rod	Marynovich		562-0952	regular	
30. Katherine & Dave	Matthews	561-0869	564-7445	friend	
31. Doug	Maxwell	565-6351	561-2776	regula	
32. Rocky	McCann	563-7151	563-1325	possible	
33. Robert & Carol	McGuinness		564-0198	family	
34. Bob	Nelson	562-2131	563-6928	regular	1
35. Sean, Steve, Sandra	Ollech	563-9964	964-2712	family	
36. Paul & Dorothy	Petersen		562-3496	family	
37. Brian	Potts	565-3625	562-8113	regular	
39. Alan	Pretty		562-3562	family	
40. Maureen	Pretty		564-9906	regular	
41. Warren	Reaville		562-8323	regular	
42. Gil	Self		964-7279	regular	
43. Brian, Heather, Clay	Stillwell		963-9108	family	
44. David	Sundberg	562-6655	562-5774	regular	
45. Bruce & Wendy	Thiel	562-2862	964-1957	family	
46. Peter	Thompson		562-1624	new	
47. Elie	Korkmaz	960-6622		possible	
48. Donovan	Unruh			possible	
49. Gary	Virtue	563-1538	564-6292	family	
50. Alan & Jennifer	Whitman	963-7552	962-7665	family	5

51. Brian Thair (B.C. Science Council)				promotional	
52. CBC Radio Station		562-6701		promotional	
53. Chris Toft (Prince Geoge Tourism)		562-3700		promotional	
54. Cindy Rebman (Fort George Museum)		562-1612		promotional	
55. CJCI Radio Station		564-2524		promotional	
56. Country 101 FM		562-2101		promotional	
57. Ed Loerke		562-2131		friend	
58. Fraser Decan (CNC continuing Ed)				promotional	
59. Ian Cameron (Universtiy of Manitoba)				exchange	
60. Kathy Plett (CNC Library)		562-2131		promotional	
61. Lance Odiorne		562-2131	563-1193	friend	
62. Mike Foottit			562-6987	school	
63. Okanagan Ast. Soc.		496-5272		exchange	



Solar Eclipse

by Orla Aaquist

On May 10 Bob Nelson, Matthew Burke, Mike Lancelot, Dave Kubert, and I went down to the Prince George Civic Centre to view the solar eclipse. It was cloudy, of course, but we did see quite a few glimpses of the event through the patchy cloud cover. As predicted, the eclipse began at about 8:30 AM and lasted till about 10:30 AM with the mid-eclipse at 9:30. Although only about 40% of the sun was covered by the moon, everyone was excited about the view through our C8 (with solar filter in place, of course). Initially, we attempted to look at the sun using the club's H-alpha filter, however it was too cloudy making for poor contrast. Instead we used the college's mylar filter.

The event attracted about 30 people. In addition we were visited by reporters from CBC radio, PGTV, and The Citizen.

There are usually two solar eclipses a year in the world, however it is not often that any particular place is graced with a total solar eclipse. Below is a list of future solar eclipses.

1994 November 3

1995 April 29 and October 24

1996 April 17 and October 12

1997 March 9 and September 1

1998 February 26 and August 22

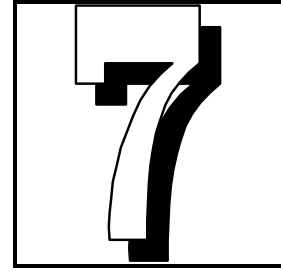
1999 February 16 and August 11

2000 February 5, July 1, July 31, and December 25

Four solar eclipses at the turn of the century! Unfortunately, none will be visible in Prince George.

Recent PGAO Visitations

by Orla Aaquist



The Observatory was visited recently by several groups. On April 28, the Science Council of B.C. brought a team of about 15 members to see our handiwork. It was important to give the Science Council a good impression, because it is through them that we obtained one of our grants. I am happy to report that they were very please with what they saw at the observatory.

On May 6, physics instructors from various colleges and universities from around the province came to CNC for the *Physics Articulation Meeting*. In the evening, they visited our observatory. Unfortunately, it was cloudy, but we did get some very positive comments about our facility.

The Physics Articulation Meeting is always followed (May 7) by a meeting of the American Association of Physics Teachers (BC Branch). This year I had the *pleasure* of organizing the agenda for this meeting, and (of course) it also included a trip to the observatory. This evening was wonderfully clear, and we had a chance to show off our 24" and GPC8.

On the same evening as the AAPT visit, we had a visit from Tom Cameron, a member of the Calgary branch of the RASC. Tom is an avid amateur who plans his business trips around the new moon. He also brought greetings from some old friends from Calgary.

The *Association of College Trades Instructors* also paid us a visit one evening. On this occasion, a barbeque pit was promptly dug and a small fire started on the south side of the observatory. Seeing

Announcements

The PGAS Librarian

The PGAS is slowly beginning to accumulate a variety of *stuff*, including books, videos, slides, newsletters from various sources, a scrapbook, posters, magazines, and-so-on. Some of this stuff is in my basement: SkyNews, OK Skies, The Universe In The Classroom, a few posters, a few PeGASus T-shirts, Astronomy Magazines, and probably more. Some of the stuff is at the observatory: a variety of astronomy books, star atlases, posters, post cards, and also equipment like eyepieces, filters, and-so-on. Bob Nelson probably has some of this stuff in his van (right Bob?).

We need someone to keep track of and ORGANIZE our stuff before things get lost, misplaced or begin to deteriorate. To give you an example, I recently found some magazines and telescope accessories in the *basement* of our observatory. I call this place the *dungeon* because some of our stuff is being tortured there. The magazines were somewhat damp, and if they had been left there for much longer I am sure that mildew would have ruined the magazines. Bob's *Sewer Scope* was also found recently in the *dungeon* with water and rust in the primary optics.

The job of the librarian would be to catalogue everything and find a place for it. Not only books, but all of our stuff. If there are any members who have a knack for keeping things organized and catalogued, we (the executive) would love to hear from you.

PGAS IS OPEN TO THE PUBLIC

From May 13 until July 2, the PGO is open to the public on Friday and Saturday evenings from 9 PM until midnight. We are keeping the observatory open regardless the weather. Call Jon Bowen for more information. Your help will be appreciated.

Educational Opportunity

If there is anyone in the club who has the desire to teach an astronomy course for the continuing education departments of School District #57 or the College of New Caledonia, call Orla Aaquist (964-9626). Programs for the fall must be submitted by the beginning of June. **You will be paid for the presentation of the course.**

If you have anything to announce or advertise, consider this space of the PeGASus.

10

Wonders Never Cease

*1

by Ken Hewitt-White

In 1572, Tycho Brahe gazed in wonder at the brilliant supernova that would bear his name. He could not know that 422 years later, we are still waiting for a stellar explosion as bright. (Amazingly, Johannes Kepler witnessed a supernova only 32 years after Tycho; though arresting to the eye, it was not as bright as 'Tycho's Star'.) In Tycho's day, no one knew about stellar evolution. They interpreted the event of 1572 as a brand new star. Tycho and his peers were astonished. The firmament was considered a sphere of unchangeable perfection; it was unorthodox for nature to provide a new star, even temporarily.

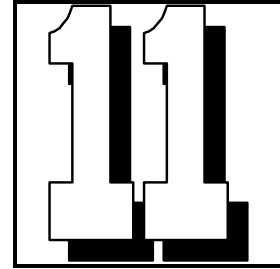
I confess to periods where I wonder if anything comparable to Tycho's nova will ever punctuate the celestial sphere again. For example, it's been a long time since we've had a very bright comet. But though we may have to wait awhile for the comet of our dreams, more subtle phenomena do occur.

The evening of April 7 was a case in point. That the sky cleared off was in itself an act of sudden change. The windy, wet stuff gave way to a clear window low in the west at sunset. As Venus punctured the twilight, the low clouds peeled back. The window widened and drew overhead, like the slit on an observatory opening on command. I saw my chance and ripped the tarp off my 17.5" Dobsonian.

The word was out that a moderately bright comet was in Auriga, and two -count 'em, two - supernovae had erupted in bright galaxies. Comet McNaught-Russell fell prey to my 70mm finder in less than a minute. In the main scope, it appeared big, bright, and round - but without a tail. (Grumble, grumble... doesn't anyone make comets with tails anymore?) But I shouldn't complain; this 6.5 magnitude iceberg was still pretty, and it was drifting fast enough that ten minutes looking confirmed the motion.

By now, the lid of cloud had rolled back to the east,

revealing the Big Dipper. Tucked under the handle is M51, the Whirlpool Galaxy, that magnificent face-on spiral whose signature 'whirlpool' structure even 8" scopes can detect. In the 17.5", the spiral arms were loosely wrapped around M51's nucleus as usual (as usual - an astonishing sight!). But there, next to the nucleus, almost shoulder to shoulder with it, was a faint star where none had appeared in my last night out, March 29. It was the supernova!



There is a star (which often gets confused for an intruder) in one of the spiral arms, and the supernova was a bit brighter than that one. According to the note I got 24 hours earlier, the supernova was fainter than this star. The light was still on the rise! Oh boy, there it was: this single pinpoint amongst a spiral wash - all the other stars blurred into a haze by 35 million light years of void. That must have been a helluva bang a few nights earlier!

Now the sky was completely clear. Leo was poised near the meridian and Virgo was lifting out of the horizon haze. I consulted my charts and located NGC4526, the other galaxy in which a supernova was lurking. 4526 is much smaller and dimmer than M51, but still bright by telescopic standards - about magnitude 9.8 according to my lists. I tracked down the galaxy's neighbourhood, not far from Epsilon Virginis (near the periphery of the great Virgo cluster of galaxies). Gingerly, I star-hopped the Dobby into the exact spot.

Bingo. NGC 4526 appeared at high power as an elongated spiral, tipped about 20 degrees to our line-of-sight. It's minuscule M31, with bright nucleus and spiral arm 'wings' to either side. And there, nestled against the nucleus, well inside the oval smear, was the supernova. It was dim, but not much dimmer than the M51 guest star. NGC 4526 must be significantly farther away than M51 (I'm guessing here: if it's near the Virgo cluster, it might be 50-70 million light years off), so the supernova, intrinsically, must be a whopper.

Again, the sensation went through me: a distant, fuzzy galaxy attended by a single stellar point - not a line-of-sight accident, but an incident of nature that produced an



outburst physically related to the fuzzy target. The star possessed a light energy comparable to the galaxy itself. Mind boggling.

I wasn't quite done. I'd seen periodic Comet Temple a month earlier in the same general area. Astronomy magazine had updated coordinates for the distant but brightening visitor. I tracked it down in eastern Virgo and had a look. The comet was about 10th magnitude. It had a starlike nucleus, and a fan to one side. A tail! This comet is way beyond Mars, forever locked in the deep-freeze. It had passed opposition just a few nights earlier (it's rare to see a comet at opposition), and here it showed a tiny tail. Funny, the comet at high power (with the offset nucleus) looked like NGC 4526 at low power (with the offset star). Interpretation is very important part of visual astronomy.

Clouds were sweeping in from the South. My window was closing. The forecast was for rain in a matter of hours, so I tarped up the scope and headed inside - bone chilled but satisfied. This was no 'Tycho' night; none of this stuff was visible to the unaided eye. But I had experienced clear evidence that the universe is seething with motion and change.

The wonders never cease.

Note: And to think if I had untapered my scope on April 2, and pointed it at M51, like I always do, I would have found myself a supernova! Now I know how Al Whitman feels.

***1**

Ken Hewitt-White is the editor of OK Skies, the newsletter of the Okanagan Astronomical Society, and an avid amateur astronomer. Ken's article was copied from the May 1994 issue of OK Skies with only minor changes referencing the OK Skies Newsletter, and perhaps a few spelling and grammar errors inadvertently introduced while typing from the original document. I thought that this article would be of local interest because it references Al Whitman and his article in last month's issue of the PeGASus, 'SUPERNOVA ADRENALIN RUSH'.

Starlab is Coming!

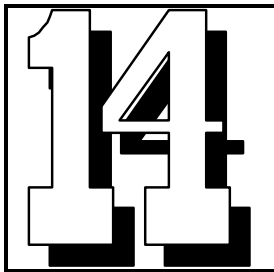


by Orla Aaquist

On Tuesday, July 5 the H.R. MacMillan Planetarium's astronomy road show is coming to Prince George. Together with the PGAS and the Fraser-Fort George Regional Museum, we hope to put on an exciting astronomy event for the PG public. The people involved with the venture are David Dodge from the planetarium, Cindy Rebman from the museum, and Orla Aaquist (that's me) from the PGAS. Here is what I know so far.

Every summer, the MacMillan Planetarium go on the road with a 25" Dobsonian telescope, a starlab and a slide show. The starlab is an inflatable, 3 metre planetarium, which can seat about 30 kids or 15 adults. Usually, the road show visits parks and communities around the province during the summer months, entertaining campers with their starlab and a slide show presentation during the early evening and telescope viewing after sunset.

Early in April, I got a call from David Dodge who wanted to know if it was possible to do a community event in Prince George rather than going to a local provincial park. Being the negative person that I am, I first thought of all the reasons why such a thing wouldn't work before I finally hit on the reason why it would work. Actually, I do this as a self defense mechanism, because otherwise I get



involved with too many things.

The plan is to hold the event at Fraser-Fort George park near the museum. The museum is willing to stay open, hopefully until midnight, for the starlab and slide show presentations. The planetarium's slide show focuses on views of the night sky as seen with the unaided eye, binoculars and telescopes. To complement this, PGAS can present a solar viewing program using our Hydrogen Alpha filter, solar projector, filters and lenses to demonstrate how to view the sun safely. We can also include a slide show on the sun and a hands on demonstration of lenses and mirrors, in case of clouds.

At such events, it is important to have as many telescopes as possible. The event will go ahead regardless the weather. Even if it is cloudy, the presence of telescopes is important because it gives people something to see and something to talk about. So please plan to dust off your optics, even if they are small, and bring them down to the park even if it is cloudy.

The final plans have not yet been made. However, in my own mind I see this as an opportunity for a late afternoon (all night) family picnic in the park. If you have any ideas to help make the event a success, or if you just want to help out, please let me know (964-9626). Whatever we plan has to be flexible since neither the weather nor the attendance are predictable.

Recommended Videos



by Don Moffatt, in Issue 151 (February, 1994) of SkyNews

"*The Aurora Explained*, a new release from the Aurora Color Television Project of the Geophysical Institute of Alaska, offers you incredible images of the eerie and beautiful aurora, usually visible only from the frigid subarctic latitudes. In non-technical terms, this video explains what the northern lights are, how they work, and why and when they appear -- a great resource for anyone with an interest in this phenomenon and very appropriate for classes from sixth grade through college." 1992, VHS, 30 min., colour. VT 122, \$29.95, from the Astronomical Society of the Pacific, 390 Ashton Avenue, San Francisco, California 94122.

"*The Aurora Watcher's Handbook*, published by the University of Alaska, is a fitting companion to the video. Neil Davis explains how the aurora works, where and when it is most often seen, and even how best to capture it on film. Included are overviews of northern legends and myths, and current scientific theories on why aurora behave as they do." 1992, 230 pgs., illustrated. BO 408, \$19.95, from ASP.

"*COSMIC CLIPS: Animations from Astronomers*. The next time you have to prepare a college lecture or presentation, reach for this compilation of thirteen video clips developed by astronomers as part of their research, many employing the latest supercomputer models. Each animation and time lapse segment is artistically beautiful as well as scientifically compelling, and is described in an informative narration. Topics include galaxy collisions, the Crab Nebula pulsar, the x-ray Sun, Pluto and its moon Charon, flare stars, and the motions of galaxies over time, among others. Additional reference information is also included." 1993, VHS, 30 min. VT 121, \$34.95 from ASP.

"*Aurora*", a videotape of selected aurora images accompanied by symphonic music." VHS, 27 min. University of Alaska Press, 1st F1. Gruening, University of Alaska Fairbanks, Fairbanks, Alaska 99775, (907) 474-6389.

Editor's note: The PGAS obtained the three videos described by Don as part of the PeGASus Project run last year. If you want to have a look at them, please feel free to come out to the observatory and view them there. If you want to sign them out, just ask our librarian (when we get one).

The Image Gallery



Hubble image of an asteroid

This image was retrieved from pubinfo.jpl.nasa.gov by Dale Jepsen, a recent CNC astronomy student. Unfortunately, very little information is given with the files in this public directory, one of the shortcomings of NASA.