

STARDUST

Newsletter of the Royal Astronomical Society of Canada
Edmonton Centre



September 2009

Volume 56 Issue 1



Jupiter shines brilliantly in the late summer sky, accompanied here by Europa, Ganymede, and Io (L to R). North is at the bottom. Photo by Murray Paulson, 2009-08-20.

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Stardust	Articles for Stardust may be submitted by email to mward@interbaun.com . Submission deadline is the last day of the previous month (e.g. for the May issue submit by 30 Apr). Submit in any standard document format (MSOffice, OpenOffice, AbiWord, plain text). TimesNewRoman 10pt single-spaced is preferred. Don't bother with fancy formatting, odd spacing, strange fonts, etc.; it will only be discarded. Graphics (GIF or JPG please) may be submitted as separate files, and clearly identified.

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Upcoming Events, Meetings, Deadlines, Announcements

MEETINGS 2009

	General	Council	Observers	NewMoon	FullMoon
Sep	14	28	2	18	4
Oct	19	26	5	18	4
Nov	9	23	2	16	2
Dec	14		7	16	2

MEETING LOCATIONS 2009

Regular General Meetings are at 7:30pm in Telus World of Science, 11211 – 142 St. *follow the signs, from the main entrance*

Council Meetings are at 7:15 pm in the ATA Building, 142 St & 111 Ave. *follow the signs, from the main entrance*

Observers Meetings: *location varies*

Expenditure Deadline

The deadline for the fall round of expenditures is October 19th, 2009. We have a limited amount of funds to spend so if you have any ideas of how we should allocate these funds, please submit an expenditure proposal. Forms for expenditures are on the RASC website at <http://www.edmontonrasc.com>. Please submit completed expenditure proposals to Sheldon Helbert (shelbert@eba.ca) or Peter Hall (peter.hall@shaw.ca).

Expenditure Proposal

The wording of the original motion was denied by Gaming. Council approved the newly worded motion below over the summer. The expenditure listed below will be voted on at the October general meeting, however this is formality only, as Gaming has already approved the expenditure, and the event has been completed.

Moved that \$2350.00 from the casino account be used to support the U of A Institute for Space Science, Exploration, and technology Space Academy in 2009, by funding bursaries to offset the costs of the student fees to attend the Academy. Subject to Gaming Commission approval.

Stardust Volume Number Adjustment: *a message from the editor*

This is Volume 56. Last year was Volume 54. There will be no Volume 55. Get used to it.

In Julius Caesar's day, the Roman calendar had gotten so far out of whack with the actual seasons that Caesar inserted 67 extra days into the year 46 BC, and introduced the Leap Year, to get things back in order.[1] I know how he felt, a little bit, sort of, maybe.

Stardust's volume numbers are incorrect, and have been for decades. If 1954 - 1955 was volume 1, then 2008 - 2009 should have been volume 55, but it was 54. I have created a table, accessible here:

http://www.ece.ualberta.ca/~mpward/stardust/vol_no_idx.html

See here also:

http://www.ece.ualberta.ca/~mpward/stardust/org_idx.html

Exactly when this error was introduced, I can only guess. The volume numbers are correct up to May 1961 (Vol. 7); then there is a lengthy period when volume numbers are not included. Volume numbering resumes in September 1974, and this may be the start of the error. September 1974 should be part of volume 20 (1973 - 1974), but it is labelled volume 19, issue 10. October

1974 is labelled Vol. 20 No. 1; it should be Vol. 21.

The 2009 - 2010 Stardusts will be volume 56, correcting this error. Consequently, **no issues of Stardust will bear the volume number 55.**

Incidentally, barring a few minor adjustments, we are still using Julius Caesar's calendar.

[1] See Suetonius, *Julius Caesar*, ch. 40; Plutarch, *Julius Caesar*, et al.

President's Report by Sherry Campbell

Welcome back everyone after another summer. I hope everyone had a chance to get some observing done, whether it was at a star party or even in your own backyard. The summer nights are warm here, if not very dark, but that shouldn't stop you from checking out the night sky. After all, the stars are still there, both variable and colourful, and there is always the Moon.

First off, I would like to give a big thank you to all those that helped out with the Casino in August. Without your help, our

Club would be drastically short of funds to further our desire to promote astronomy to our members and the general public. Thank you to all that stepped up to help.

Another big thank you goes out to all those that helped out at the Elk Island Dark Sky Preserve celebration last weekend. Every year we celebrate the creation of this dark sky preserve and this year we were pleased to welcome the Ukrainian Cultural Heritage Village as partners in the dark sky preserve. This is a

huge undertaking for our Club every year that is spearheaded by Sherrilyn Jahrig. Her tireless efforts have helped create a preserve we can all brag about. Thanks to everyone that brought out their telescopes and did presentations to the public. Without you, this event would not be possible.

Tonight is the second last day that you can sign up for the George Moores' Astronomy Workshop at the reduced rate. If you forgot your chequebook, we will still accept your registration if the envelope is stamped with tomorrow's date. Otherwise the prices are as published on the website. I am looking forward to this event as Stephen James O'Meara is our guest speaker and the last time he was here was when the GMAW was held at Camp Maskepetoon. It just seems fitting to have him back there.

If you missed all the summer star parties there are still two more to go. Northern Prairie Starfest and the Alberta Star Party and coming up the weekend of September 19-20th. Unfortunately,

the guest speakers and major activities for both star parties are happening on the same days, so you will have to choose which one to attend. If you want to do some quiet observing before everyone arrives, Northern Prairie Starfest will be open starting on September 15th.

The October general meeting is our deadline for the fall round of expenditures. We still have a bit of money to spend, so if you have any ideas on what to spend it on, please submit an expenditure proposal to either Sheldon Helbert or Peter Hall before October 19th. We will not be receiving our money from the Casino we just held until late this year. It will be in place for the spring round of expenditures.

Remember too, that next month, the general meeting is pushed back a week to October 19th due to Thanksgiving. Clear skies!

Greek Mythology: Orion the Hunter by Michael Ward

I tend to use Greek names, with the Latin (Roman) equivalent in brackets, where applicable.

Orion is a composite figure; he seems to be a combination of several characters, or stories about several characters have ended up being attributed to one. Orion is not the only such individual in Greek mythology.

His name probably means "mountain man", from *oros* (ὄρος), *mountain*, although Aristomachus (reported by Hyginus) says the name comes from *urine* [1]. The English *urine* derives from the Greek *ouron* (οὔρον, Latin *urina*) and this bizarre story tells of a certain Hyrieus of Thebes (or Chios), who prayed for a child and sacrificed an ox (or bull). Post-sacrifice, Zeus (Jupiter) and Hermes (Mercury) tell him to skin the ox, then they urinate in the hide, tell him to bury it, and at length a son springs up from the Earth [2]. The Earth is thus sometimes considered to be Orion's mother. Other ancient writers call him the son of Poseidon and Euryalē, an otherwise obscure daughter of Minos [3]. A huge man - a giant, according to Homer [4] - Orion's hobbies were hunting and chasing women. He excelled at both.

The story of how he ended up among the stars has several versions, with variations in detail. He traveled to the island of Chios, where the king was Oenopion. Chios was, and still is, apparently, famous for its wines. Oenopion means *wine face* [5], and he is a son of Dionysus, god of wine, and other things. Either Oenopion offered his daughter Meropē to Orion for a wife, if Orion would rid Chios of dangerous wild animals, (one version), or Orion first fell for Meropē and then Oenopion offered him the deal.

There must have been a great many of these animals. Orion went out hunting every morning and brought back the skins in the evening to show Meropē. Oenopion wasn't really keen to lose his daughter, being in love with her himself - great tabloid material here - so he kept inventing rumours about more beasts being spotted here and there. Orion went out looking, but of course found nothing. He soon became suspicious, and angry. One night he helped himself to a large quantity of his host's wine, and inflamed with passion, broke into Meropē's quarters and got naked with her. Her feelings on the incident are not recorded.

This was a serious matter, more serious than you think, because in ancient Greece there was something called *xenia*, which is the relationship between a guest and a host. It is sanctioned by the gods, and overseen by Zeus Xenos [6]. Seducing or raping your host's daughter was not simply going

beyond the bounds of hospitality, not just a breach of etiquette, and not simply a legal issue, it was also a religious issue. Oenopion quickly learned what happened and called upon his father Dionysus to help avenge the family honour. Satyrs arrived with more wine and plied Orion until he either fell asleep or passed out. Oenopion then had him blinded and dumped on a local beach. Not killed, we notice - murdering your guest would also be a serious offense against *xenia*, and would have made Oenopion no better than Orion. Offending the gods of Greece was not wise. If you were lucky, the consequences were merely horrific.

Orion regained his sight with the help of Helios (Latin Sol, the sun). One story is that he wandered to Lemnos where Hephaestus (Vulcan) took him to Helios; another is that Eōs (Latin Aurora, dawn), who was in love with him, took him to Helios, who was her brother. Healed, Orion returned to Chios looking for Oenopion, but Oenopion had gone into hiding and Orion never found him. He gave up and went to Crete.

It may have been Artemis (Diana) [7] who persuaded Orion to give up the search for Oenopion (one version), or Orion may have met Artemis on Crete (another version). Whichever the case, Artemis invited Orion to go hunting with her. While hunting, Orion became amorous and either attempted to force himself upon Artemis, or one of her nymph companions (who like Artemis are virgins - or supposed to be [8]). Bad move. Artemis sent a giant scorpion after Orion. In one version of the story it stings him to death, whereupon Artemis places Orion and his two hunting dogs, Sirius and Procyon, among the stars. The scorpion also ends up in the sky.

In another version of the scorpion episode, Apollo [9], twin brother of Artemis, became concerned, or even jealous - more tabloid material - of how much time Artemis was spending with Orion, and it was he who sent the scorpion. In this version, Orion fought the arthropod, but the exoskeleton was too tough. He gave up and ran away, or rather swam away, since this happened on a beach. Apollo approached Artemis, who was unaware of any scorpion attacking Orion, on that same beach. By now Orion's head was a dot on the horizon, and Apollo challenged Artemis to an archery contest: could she hit that dot on the horizon? It's an escaping criminal. She could, and did, killing Orion. When she realized the truth, she placed the various characters among the stars, as in the other version.

Yet another twist on the story involves the Pleiades, the seven daughters of Atlas and Pleionē. In this tale, they were followers of Artemis, and Orion pursued them - all seven at the same time, it seems, *and* their mother - and that is why Artemis became angry. They prayed for deliverance, and were transformed into doves (*pleiades*, πλειάδες in Greek [10]). This story is also told without Artemis; Zeus placed them among the stars [11] in answer to their prayer. It may be a late addition to the canon; none of the seven is a virgin in other stories, either because of marriage or other circumstances [12], which presumably would disqualify them from serving in Artemis' band.

[1] It is oddly appropriate that astronaut Wally Schirra coined the term "the constellation Urion" referring to sparkling frozen droplets of jettisoned urine; T. Benford and B. Wilkes, *The Space Program Quiz & Fact Book*, Harper & Row, New York, 1985, p. 99.

[2] Gaia (Γαῖα) or Gê (Γῆ), as in geology.

[3] Hesiod, cited by Pseudo-Eratosthenes, *Catasterismi* 32.

[4] Homer, *Iliad* 23.485-489; *Odyssey* 5.121-124, 11.572-575.

[5] From oinos (οἶνος, Latin *vinum*) and ōps, ōpos (ὄψ, ὀπός). The latter (ops) also means *eye*, and is found in such compounds as Cyclops, *round eye* (NOT *one eye*, a common misconception);

one eye would be *monops*) from *kyklos*+*ops* (κύκλος, ὄψ).

[6] *Xenos* (ξένος) means *stranger*, as well as both *guest* and *host*. As an adjective it means *new* or *strange*. In conservative ancient Greece, new things were generally unwelcome. Astute readers may be thinking of *xenophobia*, fear of new or strange things.

[7] Artemis: an ancient, complex, and, from our point of view, contradictory deity. She is both the patron of hunters and protector of animals. She is a virgin, but is also associated with childbirth, and protects the young, both human and animal. This would seem to betray interests that are not entirely virginal, i.e. fertility.

[8] Many nymphs fall victim to the passions of male deities.

[9] The Greek Apollo was also known to the Romans as Apollo.

[10] Alternative explanations for their names include being named after their mother Pleionē (unlikely in ancient Greece's distinctly patriarchal society), and *plein* (πλεῖν), *to sail*, because their position in the sky was an indicator of good sailing weather (or not). Trivia: in Japan, they call the Pleiades *subaru*, meaning something like *unity*. Have you ever noticed the logo on Subaru cars?

[11] Hyginus noted that although there were seven sisters, there are only six stars visible. The reason, he says, is that one star faded because one of the seven mated with a mere mortal.

[12] Maia was the mother of Hermes (Mercury) by Zeus, for example.

Sources: Hyginus, *Astronomica* 2.34; Homer, *Iliad* 23.485-489; *Odyssey* 5.121-124, 11.572-575

The Planets by Murray Paulson

The month starts off **Mercury** returning from its late August greatest eastern elongation, an evening apparition, as it heads for an inferior conjunction with the sun on September 20th. On the 20th, Mercury will pass between the Earth and the sun, passing only 2.7 degrees below the sun. The evening ecliptic is very poor for observing inner planets after sunset, so you may wish to try finding it in the daytime with a goto scope. Mercury wastes no time before it pops out into the morning sky, and by month's end you should be able to see it in the morning sky rising before the sun. On the 30th, it will shine at magnitude 0.6 and rises a little more than an hour before the sun. Sunrise in the Edmonton area is 6:52 am. Greatest western elongation will be on October 5th, where Mercury will sit 18 degrees from the sun and shine at magnitude -0.4 and exhibit a 7.0" disk.

As summer falls, you may have noticed **Venus** sitting high in the morning sky. It has been making a slow return to the sun since early June. At the beginning of the month, Venus shines at magnitude -3.9 and shows a 12.3" gibbous disk in the eyepiece. It is located 31 degrees from the sun. Over the month Venus moves close to the sun and by early October, it sits 24 degrees away. It will not change in brightness, but it will shrink slightly to 11" and the gibbous phase will fill out a bit. The morning ecliptic is generous, and Venus will sit with us over a good portion of the fall.

Mars has been slowly creeping back into our sky, and if you looked at it at the summer star parties, you would have seen a polar cap and possibly some details on it. It still is a morning object, and it will stay this way till December. At the beginning of September, Mars shows a 5.9" gibbous disk which will grow perceptibly over the month. By early October we see Mars shine at magnitude 0.7 and it will now show a 6.8" disk in the eyepiece. The 6" size is where serious Mars observers start paying attention to Mars.

Jupiter came to Opposition last August and has been putting on quite a show. We have had a lot of satellite mutual events, - occultations and eclipses as well as the regular Jovian satellite events. Check the Handbook p 243-244 for a detailed listing of events. These mutual satellite events are only visible twice over the Jovian orbital cycle, and the next such sequence of events is 6 years hence. Treat yourself and observe at least one eclipse event. They are quite fun. The month starts off with Jupiter shining at mag. -2.8 and it shows a 48" disk in the eyepiece. By the first week of October, it will shrink to 45" and it will dim to magnitude -2.6.



Photo by Murray Paulson

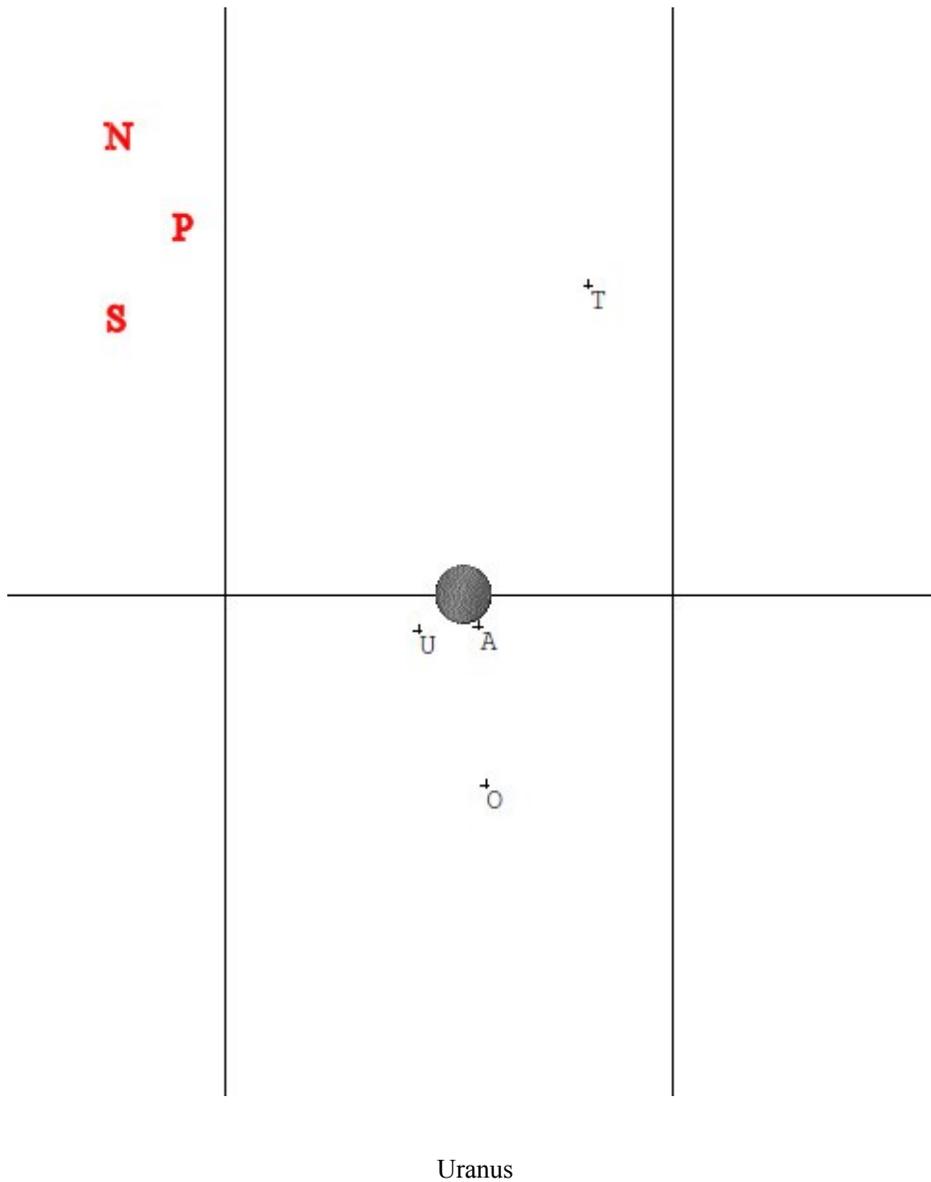
Saturn is in conjunction with the sun on September 17th, and so won't be visible for the next few months.

The Planet **Uranus** comes to opposition on exactly the same date as Saturn is in conjunction with the sun, September 17th. At this time, it will shine at magnitude 5.7 and will show a 3.7"

greenish disk in the eyepiece. At the fall star parties, try and see if you can find some of it's moons. The chart is produced by Guide, and shows the moons locations as seen at 11:30 pm local time on September 18th, 2009. Titania is located 20" from Uranus and Oberon is at 11". Use lots of magnification.

Neptune was at opposition back in August, and sits close to Jupiter in the evening sky. At mid month, it will shine at magnitude 7.8 and will show a 2.3" blue green disk in the eyepiece. On the night of the 18th, Neptune will sit just over 1 degree east of 42, 44 & 45 Capricorn. This grouping is just above the eastern most star, delta Capricorn. Check out the handbook for finder charts. On the night of September 18th, it's moon Triton will sit 14" due west, (preceding), the planet.

Moon	max dist arc sec	Magnitude
Oberon	44	14.1
Titania	33	13.9
Umbral	20	15
Arial	14	14.3



Free Public Lecture

BLACK HOLES: A Ninety Year Journey

Celebrating the International Year of Astronomy 2009

Galileo Lecturer

Dr. Laura Ferrarese

Herzberg Institute of Astrophysics, Victoria BC

September 16, 2009 • 7.30 - 8.30 pm • Light reception to follow
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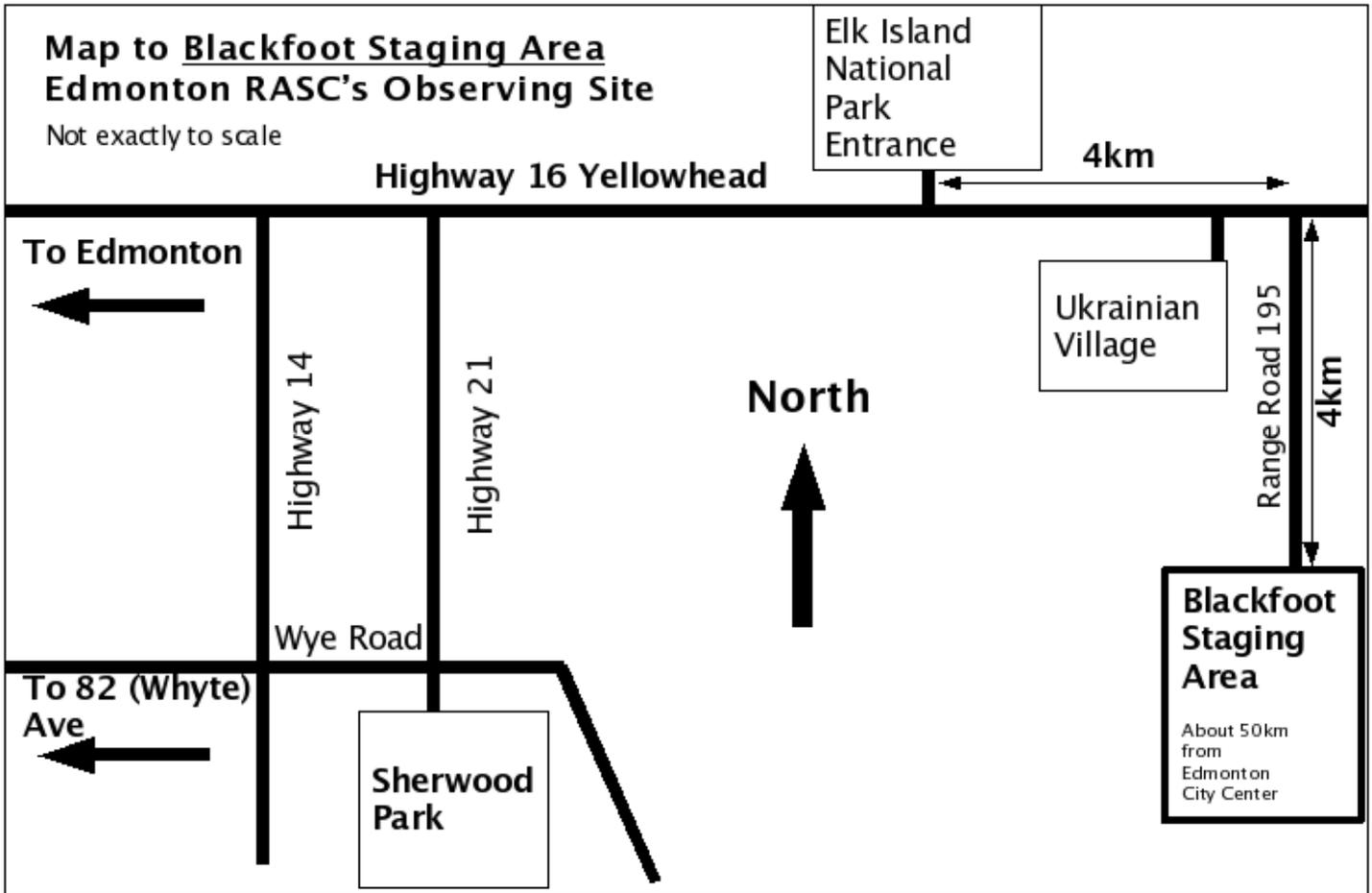


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Centaurus A - Jet Power and Black Hole Assasment Revealed in New Crandra. Image. Image courtesy: NASA/CXC/SAO Credit: NASA/CXC/CIWR/Kraft et al



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