

# Event Horizon

January 1996

Volume 4 Issue 3

## Carl Sagan 1934 - 1996

**S**EATTLE (AP) - Astronomer Carl Sagan, a gifted storyteller who extolled and explored the grandeur and mystery of the universe in lectures, books and an acclaimed TV series, died of pneumonia after a two-year battle with bone marrow disease. He was 62.

Sagan was surrounded by his family when he died at the Fred Hutchinson Cancer Research Center in Seattle, where he had a bone-marrow transplant in April 1995 and occasionally returned for treatment, said center spokeswoman Susan Edmonds. The center had identified his disease as myelodysplasia, a form of anemia also known as preleukemia syndrome.

Sagan, who lived in Ithaca, N. Y., helped transport an ivory tower realm into the living rooms of ordinary people, enthraling millions with his vivid writing and flamboyant television soliloquies.

He won the Pulitzer Prize for Literature in 1978 for "The Dragons of Eden: Speculations on the Evolution of Human Intelligence."

In 1980, his 13-part Public Broadcasting Service series "Cosmos" became the most-watched limited series in the history of American public television, a record since surpassed by "The Civil War."

The series turned him into a

national celebrity. Comics parodied his references to "billions and billions" of stars. While purists complained that he sometimes oversimplified and made significant interpretive errors, Sagan never shied away from the label of science popularizer.

"I wear the badge proudly," he told The Associated Press in 1994.

Aside from his flair for making



scientific ideas comprehensible and exciting, Sagan built up an impressive research record and always insisted that scientific investigation was his top priority.

"From when I was a little kid,

the only thing I really wanted to be was a scientist, to actually do the science, to interrogate nature, to find out how things work," he said. "That's where the fun is. If you're in love, you want to tell the world!"

In his early 20s, Sagan deduced from experimental models that Venus, long considered a habitable planet, was actually a foreboding place with a surface heat of about 900 degrees.

While teaching astronomy at Harvard in the 1960s, he established that fierce winds that sculpted the landscape, not seasonal changes in vegetation, explained the bright and dark patterns detected on Mars.

Harvard never offered him tenure, so when Cornell University in Ithaca asked in 1968 if he would set up a laboratory for planetary studies, Sagan promptly accepted.

Having helped design robotic missions for NASA since the late 1950s, Sagan made use of space-mission data in lab simulations to draw lessons about dust storms on Mars or the greenhouse effect of Venus.

He was always performing on the high wire, racing from the lecture circuit to spacecraft observations of planets to his writing desk in Ithaca. When he got stuck on one project, he

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# Editorial

**C**arl Sagan is gone. He was responsible for introducing astronomy to millions of people through his lectures, books and television appearances. He, in many ways, represents what our club strives to accomplish. To quote our mission statement "The HAA is an amateur astronomy club dedicated to the promotion and enjoyment of astronomy for people of all ages and experience levels" Achieving only a small fraction of what Carl Sagan accomplished in educating the public will make our club a true success.

A few months ago I mentioned that I would like to start an "Ask the Expert" column in Event Horizon. So far I haven't received a single question that anyone would like answered. Does this mean that everyone in our club knows everything there is to know about astronomy, or no one reads the editorial

or... are you afraid to ask a question that might be considered too simple? Speaking for myself, the more I learn about astronomy the more I realise how much more there is for me to learn. So I don't believe the first reason can be true. If no one is reading the editorial then I would be happy to stop writing it. If you are afraid of asking a silly question, you can be assured that you will remain anonymous. I could fake some questions for the column but I think that would defeat the purpose. So everyone get those questions to me and lets see what we can do with this column.

For next month's issue please send lots of articles, pictures and questions to my new e-mail address below.

Stewart Attlesey  
[attlesey@interlog.com](mailto:attlesey@interlog.com)

# Chair's Report ...

**1** 997! Already? Time does fly when you are having fun. I hope that you are all revived and refreshed and only partially debt-ridden after the holiday season. No one can complain that there were too many clear hours this past month - or the previous one for that matter. Let us hope that the New Year will bring a nice, dry, stationary high pressure system for southern Ontario.

I know that we are all grateful to Dr. Derek Ford of McMaster for another entertaining and illuminating evening. I only wish I could have been there. Thanks again to Grant Dixon for filling in and for everyone else that contributes to making the meeting a success.

Stewart Attlesey deserves credit for once again producing a superb publication. It is certainly the best

amateur newsletter that I have run across in my years. If you have suggestions for improving it further or, better yet, want to write an article or submit some information, we would be more than pleased to hear from you.

In the next month or so we will be putting together information on "The Great Comet of 1997 - Hale-Bopp". This is a golden opportunity to introduce people to the many-faceted world of amateur astronomy. If you have time or ideas to contribute to this endeavour, please contact Stewart or me.

Is this going to be a great year or what?!

Doug Welch  
[welch@physics.mcmaster.ca](mailto:welch@physics.mcmaster.ca)



The HAA is an amateur astronomy club dedicated to the promotion and enjoyment of astronomy for people of all ages and experience levels

The cost of the subscription is included in the \$15 individual or \$20 family membership fee for the year. Event Horizon is published 10 times a year.

### HAA Council

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# Rob'serving Report

## Common Names for Some Messier Objects

The following list is not necessarily all inclusive, leaving out some of the lesser-known names or alternatives.

- M1** Crab Nebula
- M6** Butterfly cluster
- M8** Lagoon Nebula Its center contains "The Hourglass Nebula" A part of M8 was named "Dragon Nebula"
- M11** Wild Duck Cluster
- M13** Great Hercules Globular Cluster
- M16** Eagle Nebula or Star Queen Nebula
- M17** Omega or Swan or Horseshoe or Lobster or Checkmark Nebula
- M20** Trifid Nebula
- M24** Sagittarius Star Cloud or Delle Caustiche
- M27** Dumbbell Nebula
- M31** Andromeda Galaxy
- M33** Pinwheel Galaxy (**M99** and **M101** also called "Pinwheel")
- M42** Great Orion Nebula, contains the "Trapezium Cluster"
- M43** de Mairan's Nebula
- M44** Praesepe or Beehive Cluster
- M45** Subaru or the Pleiades or the Seven Sisters
- M51** Whirlpool Galaxy or Lord Rosse's "Question Mark"
- M57** Ring Nebula
- M63** Sunflower Galaxy or Sleeping Beauty Galaxy
- M64** Blackeye Galaxy
- M65** forms the "Leo Triplet" with M66 and NGC 3628
- M66** forms the "Leo Triplet" with M65 and NGC 3628
- M76** Little Dumbbell Nebula
- M81** Bode's Nebula or Bode's Galaxy
- M82** Cigar Galaxy
- M83** Southern Pinwheel Galaxy
- M87** Virgo A- is in the center of the Virgo cluster. Its active center is called "The Smoking Gun" (Nasa/STScI)
- M97** Owl Nebula
- M99** Pinwheel Galaxy (**M33** and **M101**)
- M101** Pinwheel Galaxy (**M33** and **M99**)
- M102** Spindle Galaxy

**M104** Sombrero Galaxy

## Monthly In-sights

### January

- 11- BCA observing.
- 13-midnight Crescent Moon 2 deg. N of Saturn.
- 19-1am Moon 0.7 deg. N of Aldebaran.
- 23-am Mercury's greatest western elongation.
- 28- possible Mars occultation of a 7.2 mag. star.

### February

- 5-dawn Venus 0.3 deg. S of Jupiter.
- 7,8- BCA observing
- 10-am Crescent Moon 1.8 deg. N of Saturn.
- 14- Moon moves through the Hyades in Taurus.

- 24- Moon 3 deg. S of Mars.
- ◆ Saturn is still below the Great Square of Pegasus, high in the evening sky, setting in the late evening.
- ◆ Mars rises in Leo, near Regulus, around midnight. It is brightening and increasing in apparent diameter. Mars spends the first half of 1997 looping through Leo and Virgo.
- ◆ Venus and Jupiter become increasingly lost in the Sun's glare.
- ◆ Mercury is just above the dawn's southeast horizon.
- ◆ Uranus and Neptune are too close to the Sun for observation.
- ◆ Hale-Bopp is low in the early-morning eastern sky, just above

*(Continued on page 4)*

## PlanetView - Software for Planetary Astronomy

**A** new and interesting piece of MS-DOS software arrived in my mailbox recently - just when you thought such software had gone the way of the Passenger Pigeon! It is called PlanetView and it displays the "aspect" (sky orientation) of a planet or the Moon to a terrestrial observer for any date and time. Not only that, it provides publication-quality hardcopy, too!

The software produces meridians and latitude circles for planets and the Moon on demand. It can therefore serve as a shape and longitude-latitude guide for solar system observers. What's more, it also predicts the location and orientation of all the ring systems in the solar system!

The User's Manual is very complete and comes with installation notes and examples. The programme is based on the U.S. Naval Observatory's

MICA -- Multi-year Interactive Computer Almanac. MICA is called by the software's routines without user intervention.

You can obtain a free copy of PlanetView by writing to:

PlanetView  
Laboratory for Astrophysics  
MRC 321  
National Air and Space Museum  
Washington, DC 20560

Future improvements to the software include a Macintosh version and a new piece of software entitled "PlanetView Tracker" which will allow telescopes to guide or offset precisely.

Doug Welch  
[welch@physics.mcmaster.ca](mailto:welch@physics.mcmaster.ca)

# Carl Sagan ...

*(Continued from page 1)*

moved on to the next, letting his subconscious go to work.

Sagan began publishing at the age of 22, his early work mostly academic papers and books. His 30th book, titled "Demon Haunted World," was published in the fall of 1995. An earlier novel "Contact" (1985) became a best seller.

He began experimenting with

*Once asked to explain the public's insatiable interest in his rather esoteric essays, Sagan said: "They're not numskulls. Thinking scientifically is as natural as breathing."*

the popular market in 1973, publishing "The Cosmic Connection: An Extraterrestrial Perspective." The same year, he was off exploring the Hollywood star cluster, making the first of 25 appearances on NBC's "Tonight Show with Johnny Carson."

"Cosmos," winner of three Emmys, retraced the 15 billion years of cosmic evolution that have transformed matter into life and consciousness. Among its topics: the origin of life, the

## Rob'serving ...

*(Continued from page 3)*

Altair. The periods January 10-18 and February 4-17 avoid dawn moonlight, making a sighting more likely. It moves from Aquila through Sagitta and Vulpecula and into Cygnus by the end of February.

Rob Roy  
Observing Director  
royrg@mcmaster.ca

evolution of galaxies and matter, and the human brain.

Co-written by his wife, Ann Druyan, it first aired in 1980 and was seen by more than 500 million people in 60 countries. The companion "Cosmos" book spent 70 weeks on The New York Times best-seller list, 15 weeks at No. 1.

In his 1994 "Cosmos" sequel, "Pale Blue Dot: A Vision of the Human Future in Space," Sagan visualized mankind several centuries from now, concluding that humans need to settle other worlds in order to survive.

Once asked to explain the public's insatiable interest in his rather esoteric essays, Sagan said: "They're not numskulls. Thinking scientifically is as natural as breathing."

Born in New York City on Nov. 9, 1934, Sagan said he had fully expected to follow his Russian-born father into the garment industry but began to chart a career in astronomy while at high school in Rahway, N.J.

While his parents knew little about science, they nurtured his sense of wonder and instilled a healthy skepticism.

He earned a physics degree from the University of Chicago in 1954 and a doctorate in astronomy and astrophysics in 1960. He was appointed lecturer and assistant professor of astronomy at Harvard in 1962.

In 1971, he became a full professor at Cornell, where his campus lecture series drew standing-room-only crowds.

Sagan occasionally journeyed into the political arena, pushing for more government funding of space missions and stricter measures to counter the environmental threats of ozone depletion and global warming.

As for UFOs, lost continents and the like, Sagan said the world could ill afford such pseudoscientific twaddle.

"We sometimes pretend something is true not because there's evidence for it but because we want it to be true," he said. "We confuse reality with our hopes and fears."

Sagan was a firm believer in the existence of extraterrestrial intelligence, noting that organic molecules, the kind that life on Earth is dependent on, appear to be almost everywhere in the solar system.

Finding out whether mankind is alone, or not alone, he believed, is one of the world's most important puzzles.

Sagan is survived by his wife; his sister, Cari Sagan Greene; five children; and a grandson.



## Cosmology Corner

**S**aturday, January 25, 8:00 PM, the Cosmology Discussion Group will meet in room B148 (the room next to the Planetarium) in the Burke Science Building, McMaster University. The topic will be "The Limits of Knowledge". For more information contact Bill Tekatch at 575-5433 or tekatchb@mcmaster.ca .

Bill Tekatch

# The Seven Stars of the North

Once upon a time there lived a widow who had seven most filial sons. Every winter they used to cut wood in the mountains so that they could keep a fire burning constantly under the floor of their house and make it warm enough for their aged mother to sleep warm at night. But she always looked very cold and sad. However much wood they burnt, she always felt the cold. In fact, she always complained of the cold, even in the hottest midsummer months.

One night the eldest son woke up and saw that his mother was not in the room. He waited in great anxiety for her to return, though he pretended to be asleep. Just before dawn, she came creeping stealthily back, so that her sons should not notice her.

When she went out the next night her eldest son followed her secretly. When she reached a stream on the outskirts of the village she girded up her skirts and waded across the stream, muttering to herself "Oh, how cold it is," - for it was winter. She went to a poor thatched cottage on the other side. She stood before the house and called "Father, are you at home?" An old man came out and welcomed her, saying "Come in, Mother." He was a poor widower who earned a living weaving straw sandals.

The eldest son now understood what was in his mother's heart. So he hurried home and woke his brothers, telling them what he had seen. Then they all went out together and set stepping stones in the stream. They went back home and slept as if nothing had happened.

When their mother came to the stream on her way home she was very surprised to see the stepping stones which had not been there before. Of course she did not know that her sons had put them there. She was deeply grateful to whoever had set them in the stream and prayed to Heaven "May those who put these stepping stones in

the stream become stars in the sky."

So when the seven filial sons died they were set in Heaven as the Seven Stars of the North, just as their mother had prayed. And they formed the constellation known in the west as the Great Bear.\*

Told by Son Zin Te, Gupo (1926)

(\* While Zong In Sob is a delightful storyteller, he's no astronomer. Other versions of the same tale mention that people were grateful for the Seven Stars of the North because they could use their motion in the sky to tell time. This is of course, Ursa Minor, rather than Ursa Major.)

Denise Kaisler  
kaisler@taeback.kornet.nm.kr

## Sweatshirt/T-shirt Contest

We're looking for a new design for our sweatshirts & T-shirts and you still have time to enter our contest. Please submit your designs to Ann Tekatch. The winner gets a free sweatshirt/T-shirt and the deadline is January 17/97. The winner will be decided by a vote at our February meeting.

Ann Tekatch  
tekatcha@mcmail.cis.mcmaster.ca

## Attention AAVSOers

There was a very recent AAVSO News Flash that said supernova 1996cb has brightened to 14th magnitude. It is odd for a type II supernova to take so long to reach maximum and there are other reasons to think this one is unusual. 96cb was detected at radio wavelengths and a spectrum we took a few nights ago shows that it is beginning to look like SN 1993J. You may remember that 93J faded and rebrightened over a three week period. While 96cb is fainter than 93J because it is a bit further away, it may still be useful to get some visual observations.

The News Flash pointed to a chart available over the network at

<http://www.kusastro.kyoto-u.ac.jp/pub/vsnet/SNe/sn1996cb.html>

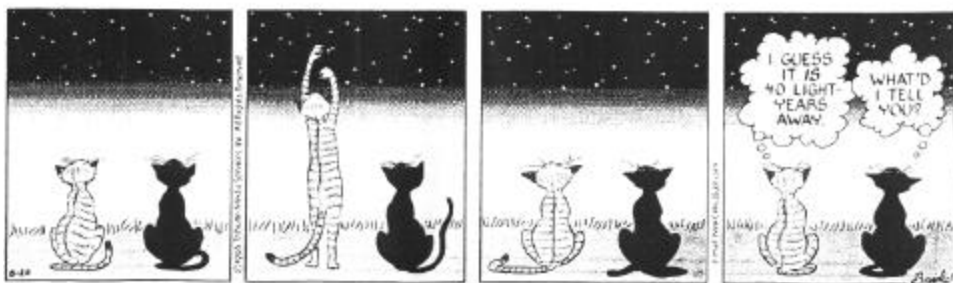
and I have a WWW page with a picture and spectra at:

<http://oir-www.harvard.edu/cfa/oir/Research/supernova/RecentSN.html>

Good luck observing this SN 1993J twin (maybe).

Peter Garnavich

*Submitted by Doug Welch*



# Covert Star Testing

**A**ny time is star testing time. Several times a night I perform star tests to make sure that the mirror's figure hasn't changed--perhaps those rumours about the catastrophic, spontaneous relief of stress in Sitall are true, or maybe the glass-ceramic has flowed and slumped between the points of the flotation cell. :) But no, the star test is always the same, and one quickly tires of looking at the text book diffraction patterns in one's own scope. <gag, cough> Soon the urge to broaden the horizons sets in, and the desire to gain new testing experience must be satisfied. That's the time to go undercover.

*"Star parties are ideal events for covert activities, allowing the ATM to perform secret tests on lots of other scopes."*

Star parties are ideal events for covert activities, allowing the ATM to perform secret tests on lots of other scopes. Of course, you should never leak the results of your clandestine operations to anyone--never blow your cover. My initial attempts at secret star testing were rather clumsy: "Excuse me, could you point your Dobby at that star and insert an eyepiece that gives about 25 power per inch of aperture?" But amateur astronomers are a bright lot, and they quickly grow suspicious of anyone whose favourite deep sky object is Polaris. Nowadays, I wait until someone offers me a view through their scope, and I take that as an invitation to perform a star test: "Want a look at M42?" "Sure.... Oooooooo.... Aaaaaaaahhh.... Outstanding.... Is that \*colour\* in the nebula?" Of course, this is all a ruse. Before the first "Ooooo," I've nudged the scope up to Zeta Orionis and am eagerly examining the out-of-focus rings. Some people take pride in their ability to find all of the Messier objects; the undercover ATM knows how to find all the bright stars \*around\* the Messier objects-- without

looking up from the eyepiece.

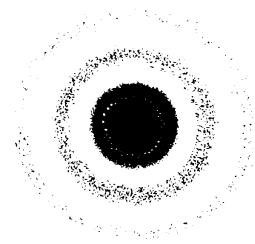
Sometimes, the wonders of the night sky will touch even the most hardened ATM. A friend has a 17.5" Dobsonian--an excellent opportunity to test for undercorrection. When the chance came, I jumped at it: "Check out NGC 891." "SURE." (Heh, heh, heh.... Gamma Andromedae is just a 3 degree bump away.) But the delicate light of the edge-on galaxy, crossed by its dark dust lane, is captivating. The soft, ancient light, welling up from midnight's ocean, seems to beckon. Its light, wonderful form--dividing (and divided by) the darkness--touches the soul with a gentle persuasion of its mystery. And for a timeless moment, all notions of figures, and testing, and earthbound considerations vanish. The same thing happens occasionally when the moon or a planet accidentally finds its way into my telescope while searching for a suitably bright test star, or a close double.

These feelings are most disconcerting, and should be avoided. The beauty of the night sky can sometimes blind us to perfectly good testing opportunities. For the true ATM, forays into the realm of aesthetics are best regarded as momentary lapses of judgement.

Lance Olkovich

**WARNING:** Lance is dangerous and probably mentally unbalanced. The best way to deal with him is just to cooperate - don't argue, let him perform his test and soon he'll be on his way. Do not offer him food or the use of your high power eyepieces - this merely reinforces his unfortunate behavioural traits. The only certain protection is to keep on hand at all times a 1" off-axis stop-down mask. Place the mask over the entrance aperture of your scope any time you see Lance approaching. Although this will not prevent the testing itself, it will minimize the duration. Nothing drives Lance away faster than the appearance of seemingly perfect optics. You have been warned.

Gary in Vancouver



## Stuff for Sale

**N**ew Year's special (in time for Hale-Bopp!) Bell and Howell LUMINA 10x50 binoculars (EWA 420 ft at 1000 yds) \$175

Also:

(2) 8" Pyrex blanks	\$65 each
Metal detector	\$75
Super 8mm Canon camera	\$50
300mm f.l. f/4.5 Dimension telephoto	\$75
6" mirror kit	\$75
Tele-extender	\$5
Keychains	\$7 each
FAX/Phone line-splitter	\$50

Don't see what you'd like? Ask me!

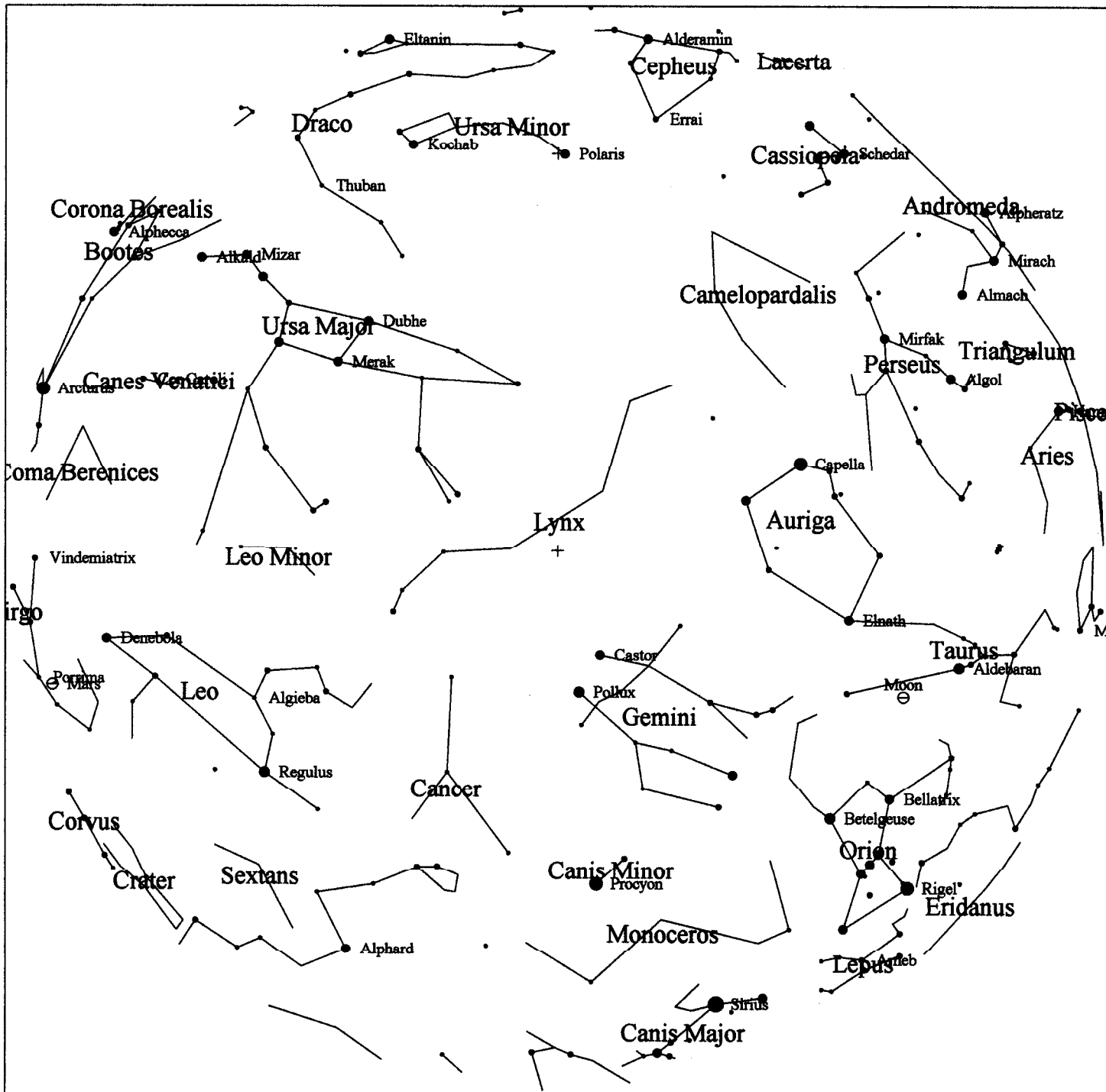
Doug Welch

(905) 525-9140 x23186 (work)

(905) 524-0848 (home)

**welch@physics.mcmaster.ca**

# February Night Skies



ECU V3.0 (Star Atlas Mode) - February Night Skies

UTC: 1997/02/16 at 03:30  
 LMT: 1997/02/15 at 10:30pm

RA=07h55.5m Dec=+43°06'  
 Field=180.0° Azim=339°00' Alt=+90°00'

# Stargazing from On High

**T**he last few hours of an intercontinental flight are always harrowing. You're bored. You're simultaneously exhausted and restless. You might even want to smother the small child in 35F who has been crying since takeoff. My recent return to Toronto from Seoul was no exception. I'd navigated the echoing corridors of too many airports, and eaten too much dubious plane fare to be interested in anything other than the chance to escape those droning engines and maybe lie flat for awhile.

Enter the tiny aircraft window - little more than a hand span wide. A casual glance at the deepening blues showed that night was on its way. It also seemed as if the plane was heading toward an ominous blue cloud bank. Wonderful, I thought, more turbulence.

But a second glance caused me to realise the aircraft was above the clouds and I was actually seeing the place where night begins. Unlike the

airless moon, where there is a razor sharp delineation between night and day, the Earth's terminator is diffused by our atmosphere. So the light didn't wink out as the sun sank over the horizon. Instead, the plane cruised through a fairy-kingdom twilight that deepened only gradually.

Sunsets at 30,000 feet are unique. The redness of ground-viewed sunsets was missing because there was much less atmosphere to scatter the blue light. The darkest point seemed to be above the plane rather than in front of it. Even when the sky was nearly black, a strange glow lingered at the western horizon. Also, the event seemed to last longer than usual, although my eagerness to see the stars might have been the reason for this.

When true night did fall, it was a rare treat. Despite the cabin glow and wingtip running lights, the circumpolar constellations were startlingly visible. The sky was clear below, as well as above, so I also had a good view of the

ground. White-orange light seemed to run down roads and pool in towns. Lit up that way, the Earth didn't look much different from one of Hubble's deep field shots.

There were drawbacks, of course. No matter how much I craned my neck, I could see 40 degrees of sky at most. My seatmate's reading lamp created an annoying mirror effect. And the small child in 35F just wouldn't shut up.

But the majestic sight lent me peace, right through the ear-splitting touchdown and the long lines at immigration. So next time you have a red-eye flight, keep one of them open and fixed on a window. You'll get an exceptional look at what we all strain to see from the ground.

Denise Kaisler  
[kaisler@taeback.kornet.nm.kr](mailto:kaisler@taeback.kornet.nm.kr)

## CALENDAR OF EVENTS

- ◆ Saturday, January 11, 8:00PM
- ◆ Friday, January 17, 7:30 PM
- ◆ Tuesday, January 21, 7:00 PM
- ◆ Saturday, January 25, 8:00 PM
- ◆ Thursday, February 6, 8:00 PM
- ◆ February 7,8 8:00PM
- ◆ Friday, February 7, 11:59 PM
- ◆ Friday, February 14, 7:30 PM

**BINBROOK OBSERVING SESSION** - Proposed observing night. For confirmation or directions call Rob Roy (692-3245) or Ann Tekatch (575-5433)

**COUNCIL MEETING** - Location to be announced. Call Doug at 525-9140 Extension 23186 if you are interested in attending.

**HAMILTON AMATEUR JUNIOR ASTRONOMERS** - Mac Burke Science Building, Rm B148 (beside the planetarium) Topic to be announced. For more information contact Rosa Assalone at 540-8793

**COSMOLOGY DISCUSSION GROUP** - Room B148 (the room beside the planetarium,) Burke Science Building, McMaster University. The topic will be "The Limits of Knowledge"

**ROYAL ASTRONOMICAL SOCIETY OF CANADA Hamilton Centre** - General Meeting - McMaster University Medical Building Room 1A6. Role of CO<sub>2</sub> in Planetary Atmospheres. For more information please call Richard Petronie

**BINBROOK OBSERVING SESSIONS** - Proposed observing nights. For confirmation or directions call Rob Roy (692-3245) or Ann Tekatch (575-5433)

**EVENT HORIZON DEADLINE** - Please submit your articles and pictures to Stewart Attlesey, [attlesey@interlog.com](mailto:attlesey@interlog.com) or modem (905)827-9105 or snail mail to 1317 Mapleridge Cres., Oakville, L6M 2G8

**HAA GENERAL MEETING** - at the Spectator Building auditorium. Speaker to be announced. Parking lot observing, weather permitting.