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In this issue:

The President's Message

What's New in Space-Part 1 of the Gagarin Stories

Profiles in Astronomy-Bengt Stromgern, Danish astronomer

CVA Calendar for May and June 2008

Astronomical Object of the month-M31, the great galaxy in Andromeda

Tunguska at 100-Scientists still don't know what caused

CVA Calendar for May and June 2008



Astronomical Object of the Month

The Andromeda Galaxy, M31, a brilliant sight in the sky. NASA image

Quote of the Month:

It's a great story, the modern history of the universe, and maybe it's even true. It is probably part of the human condition that cosmologists(or the shamans of any age)always think they are knocking on eternity's door, that the final secret of the universe is in reach. It may be part of the human condition that they are always wrong. Science, inching along by trial and error and by doubt, is a graveyard of final answers. But at least cosmologists are wrong in different ways, like Woody Allen, who describes the effects of increasing fame by saying that he now fails with a better class of woman.

Dennis Overbye, from *Lonely Hearts of the Cosmos*

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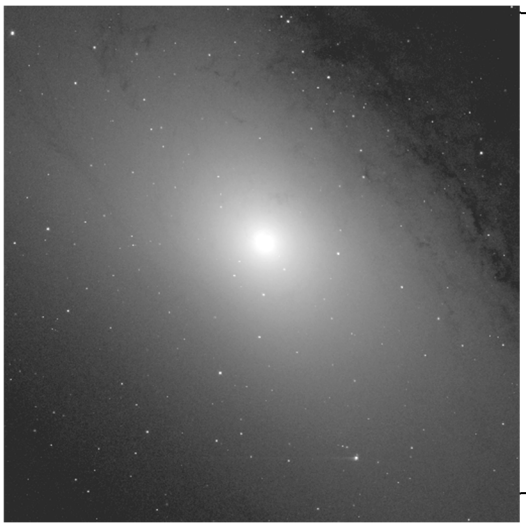
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The President's Message



Detail of M31's central area-
Image from the 160" telescope at Kitt Peak, Arizona

Profiles in Astronomy

Bengt Stromgren
1908-1987



Stromgren was born and raised in Gothenberg, Denmark. His father was a professor of astronomy at the University of Copenhagen and director of the Copenhagen Observatory. As such, he grew up surrounded by science. He worked with his father at the observatory, met scientific luminaries such as Neils Bohr and Enrico Fermi, and published his first scientific paper at 14. He graduated from the University of Copenhagen at 19, and two years later earned a doctorate in astrophysics.

For the next 40 years, Stromgern moved between Europe and the United States doing astronomy. In 1936, he went to the University of Chicago to do research under Otto Struve. He returned to Denmark in 1938 to take over his father's position at Copenhagen, and while there during the war years, built and directed a new observatory at Brorfelde. In 1951, however, discouraged at the lack of post war funding for science, he returned to the U.S and became director of the Yerkes and McDonald Observatories. In 1957, he became a professor at the Institute for Advanced Study in Princeton, taking over Einstein's position. In 1967, he returned to Denmark to take over Neils Bohr's position at the University of Copenhagen. It was his last major travel; he would stay at Copenhagen until his death.

Stromgern made a number of major discoveries that increased science's understanding of the heavens. His most famous came in the 1930s when he discovered so-called Strongren Spheres," shells of ionized gas around very hot stars. On doing so, he found a relationship between the density of the gas and the luminosity of the stars. He also did pioneering work in measuring HII regions of the Milky Way galaxy, and on stellar atmospheres. In addition, he worked on the abundance of elements in the Sun and other stars, and found it to be about 70% hydrogen and 27% helium, along with 3% of other elements. For his stellar and gas studies, Strongren pioneered photoelectric photometry and turned it into a valuable tool for astrophysicists. He won many awards for his work, and at his death, was lauded as one of Denmark's greatest scientists.

Sources:
"Bengt Stromgren". Wikipedia. http://en.wikipedia.org/wiki/Bengt_Strongren
"Strongren, Bengt." Patrick Moore(ed). International Encyclopedia of Astronomy. New York:Orion Books, 1987
The Bruce Medalists. The Astronomical Society of the Pacific. http://

Astronomical Object of the Month-M31, the Great Galaxy in Andromeda

Like M1, the Crab Nebula, last issue's object of the month, M31 is one of the best known objects in the sky. It is a giant spiral galaxy, considered by many to be the Milky Way's "sister" galaxy. Scientists once thought that the two were roughly the same size, but it is now known that Andromeda is almost twice as large as our own home galaxy. Also, at 3 million light years away, it is the most distant object that can be seen with the unaided eye(some, though, give this distinction to the Triangulum Galaxy, M33, which is slightly more distant than M31).

M31, also known as NGC 224, is actually a triplet system; it has two smaller galaxies, M32(NGC221), and NGC 205, near it. It is also known to have several hundred globular clusters surrounding it. It has a number of Cepheid Variables; they were found by Edwin Hubble in the 1920s and were central to his theories of the "Island Galaxies" and the expanding universe. It is also known now that Andromeda is blue-shifted; it is moving towards the Milky Way and will eventually crash into it. Not to worry though; this won't happen for at least another billion years.

CVA Calendar for May and June 2008

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				May 1	2	3 CVA star party- Hensley Lake
4 Eta Aquariad Meteor Shower peaks	5 New Moon ● Begin International Astronomy Week	6	7	8 63d anniversary of V-E Day	9	10 International Astronomy Day
11 Mother's Day	12	13	14	15	16	17 CVA meeting CSUF E. Engineering 7pm rm 191
18	19 Full Moon ○	20	21	22	23 Riverside Telescope Maker's Conference begins	24 RTMC
25 RTMC	26 Memorial Day observed RTMC Moon occults Neptune	27	28	29	31	31
June 1	2	3 New Moon ●	4	5	6 64th anniversary of D-Day- Normandy invasion	7 CVA Star Party at Hensley Lake
8	9	10	11	12	13	14 Flag Day
15 Father's Day	16	17	18 Full Moon ○ Sally Ride, first Am woman in space 1983	19	20 Summer Solstice	21 CVA meeting at CSUF E. Englineering 191 7pm
22 Charon, moon of Pluto, discovered in 1978	23	24	25	26	27 CVA Glacier Pt weekend	28 CVA Glacier Pt Night Star Parties at Hensley Lake and Courtright
29	30 100th anniversary of Tunguska event in Siberia					

What's New in Space

The Gagarin Stories Part 1



Yuri Gagarin, the first man in space, has a near god-like status in Russia today. Every Russian school child knows who he is, and every Russian adult 50 or older can remember the day when he went into space. Long after the leading figures of the old Soviet Union have been forgotten, as most of them now are, Gagarin's name and deeds are still remembered and spoken of with admiration and respect verging on awe.

Yet, Gagarin is a figure of controversy. 40 years after his death in March 1968, he is provoking debate among many in Russia. The Russian government is currently resisting efforts to reopen the investigation into the jet crash that took his life and also that of his flight instructor. Rumors have been floating around for many years that the crash was no accident, that he was murdered, possibly on the orders of high political figures in the Soviet government. Many say that the circumstances surrounding his life and death rival those of the Kennedy murder conspiracies. As a result, in a country where so much has been obscured or distorted as to make reality and fantasy interchangeable, Gagarin has become a legend and almost a myth.

The basic facts of Gagarin's life can be briefly stated. He was born in 1934 on a collective farm in central Russia, the third of four children. The official Soviet biography claimed that his parents were illiterate peasant farmers, but this is not exactly true. Both parents were fairly well educated by the standards of the time, his mother read avidly, and his father did not do any real farming, but worked in the collective carpentry shop. Since both of his parents worked, Yuri was raised largely by his older sister. When World War II came to the Soviet Union, the family was scattered, but afterwards got back together. After the war, Yuri attended local schools, then a technical school, after which he entered the Soviet Air Force in 1953. He qualified for pilot training, and first flew solo in 1955. His flying skills increased over the next few years, so much so that in early 1960, when officials were looking for pilots to fly aboard the first Soviet spacecraft, Gagarin was recommended by his commanding officer.

Gagarin and 19 other air force pilots were chosen as the first group of cosmonauts in March 1960. Some of them he already knew from his Air Force assignments, others were strangers. In late 1960, he and five others were chosen as the "First Six," the ones who would make the initial flights. In February 1961, he and Gherman Titov were told that one of them would be the pilot for the first manned flight. A few weeks later, Gagarin was chosen, mostly because of his humility, quiet manner, and focus(as well as his "farming" background; he was the prime example of the "New Soviet Man."). Not only was Titov's father a schoolteacher, but he was also seen as being too outspoken. Gagarin, with Titov as his backup. began final preparations for the flight.



The rest is, of course, history. On April 11, 1961, Gagarin was inserted into a Korabl-Sputnik capsule, renamed Voskok, atop an R-7 rocket at Tyratam in Central Soviet Asia(now Kazakhstan). He was launched at approximately 5:30am local time, and made one orbit of the Earth before landing about 7am. By the time most Soviets were waking up, their country had put the first man into space. It was duly announced on all the morning TV and radio broadcasts, and all the newspapers brought out special editions. Gagarin became an instant hero, and the most recognizable person in the country. Celebrations took place everywhere, fireworks and salutes were given in his honor, and babies born that day were named after him. Gagarin became a genuine icon, the likes of which the Soviet Union had not seen in many years.

Yet, the Soviet Union did not inform its own people or the rest of the world about a number of incidents in the flight. Due to thruster problems, the capsule tumbled almost out of control during part of the flight, and when it came time for reentry, the service module did not separate from the capsule. Only when the craft reentered the atmosphere did the straps holding the service module burn away, and the capsule was able to make a normal reentry. Also, Gagarin did not land with the capsule; he was ejected from it and landed separately by parachute. This fact was covered up for many years because the FIA(International Aviation Association) would not have accepted the flight; the rules were that the pilot had to be launched and land with his craft.

One other event has entered the Gagarin Folklore. Many claim that during the flight, he said, "I don't see God anywhere in space," and that remark has always been attributed to him. He never said it, though. A remark similar to that was said by one of the flight engineers, and the Soviet news media picked it up as having been spoken by him, and it has stuck.

None of that mattered at the time; Gagarin became a symbol of the emerging space age, During the summer and fall of 1961, he went on several international tours, first to western Europe, then to Canada and the United States, and later to Asia and Australia. People everywhere were impressed by his courage, but also by his politeness, charm, quiet self-confidence, and sense of humility. He became the Soviet Union's ambassador to the world, making friends wherever he went.

Communist Party Secretary Nikita Khruschev seized upon Gagarin's flight as the supreme example of Soviet superiority over the West, and milked it for all the propaganda value possible. In 1962, while Gagarin was on another overseas tour, Khruschev decided that he was too valuable to go into space again, and ordered him removed from active flight status. Gagarin at first did not mind, and continued his appearances. He was also a deputy in the Supreme Soviet, the national legislature, for a year, and then supervisor of the female cosmonaut program. But as time went on, he became frustrated by his lack of flight time and training. According to some sources, in 1963 he began drinking heavily and womanizing(he married in 1959 and had two daughters), which he had not been known for doing before. He reportedly was in several embarrassing incidents involving alcohol and women, and engaged in arguments with Soviet space and political authorities in an effort to regain his flight status. Nevertheless, Khruschev was adamant; nothing could be allowed to happen to him.

Khruschev, though, was removed from office in October 1964(ironically, the same day that Voskhod 1 was launched; his telephone call to the three cosmonauts in space was his last official act), and seeing his opportunity, Gagarin began a campaign to be reinstated to the cosmonaut corps. He argued his case with prominent Soviet political and military officials, got his cosmonaut colleagues to support him, and, according to some, went so far as to write a personal letter to the new Communist Party Secretary Leonid Bezhnev, asking to be returned to active flight status. What role this almost legendary letter played is not known, but by late 1965 Gagarin was training for future space missions.

Part 2 in a future issue

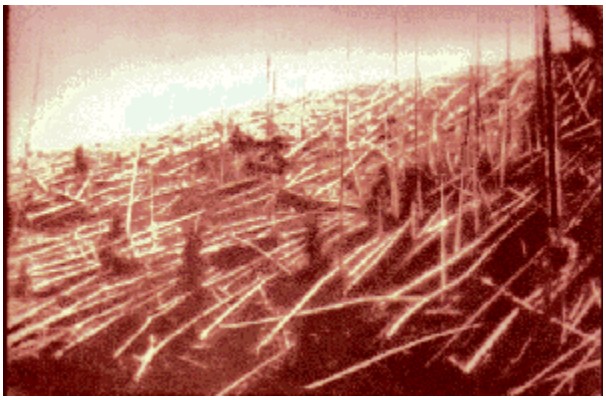
Tunguska at 100

The Centennial of One of the 20th Century's Most Famous Astronomical Events



Early in the morning of June 30, 1908,(June 17 in Russia, which was still using the Julian Calendar at the time) people living north of Lake Baikal in central Siberia saw a brilliantly lit object blazing across the sky heading approximately southeast. A few minutes later, at 7:17am local time, a tremendous explosion ripped through the entire area. A man sitting on his front porch 50 miles away from the blast was picked up and thrown against the wall of his cabin. Windows 300 miles away were shattered by the sound of the explosion. People in the area reported a huge fireball that seemed to extend across the horizon, followed by clouds of dense smoke. Over the next several days, atmospheric disturbances were reported in Western Europe and as far away as Canada; they lasted, in some cases, for several weeks. Siesmographic instruments recorded a shaking equivalent to a 5.0 on the modern Richter scale. Something had encountered Earth and left its mark in a dramatic way. Since it occurred near the Tunguska River, it is now known as the Tunguska Event

Within a few years, Europe was to be at war, followed by the Russian Revolution in 1917, so not until 1920 was an expedition sent to determine what happened. Geologist Leonid Kulik of the Russian Academy of Sciences lead a team into the approximate area of the explosion. It was, and is, a harsh land, covered with forests and swampy bogs. As Kulik neared the site, he found thousands square miles of forest flattened and burned. He was able to trace the flattening to its epicenter, a swampy area where there was virtually nothing left. During the time that he was there, Kulik took photographs, surveyed the area, mapped the destruction, interviewed witnesses, and concluded that something from space had hit the Earth.



Kulik made three more trips to the Tunguska area, in 1923, 1927, and 1930 (The picture at right, showing forest devastation, was taken during his 1927 expedition), learning more and more each time. Since then, many other scientists have studied the Tunguska Event and have concluded that either an asteroid or a piece of a comet was responsible for it, more likely the latter, since no asteroid debris has ever been found. Based on eyewitnesses accounts and the pattern of physical devastation, they believe that it was about 50-60 meters(170-200 feet) in diameter, and did not crash into the ground, but broke apart about 5-10 kilometers(3-6 miles) above the surface of the Earth, causing an explosion of up to ten megatons, the equivalent of a large nuclear bomb. Scientists have calculated that if it had happened about five hours earlier, the object would have exploded almost directly over Petrograd(St. Petersburg), probably destroying the city and killing most of its 500,000+ residents.

Scientists have now identified over 100 impact craters on the Earth's surface, in places ranging from North America to Europe to Africa to Australia. The best known is Berringer, or Meteorite, Crater, near Flagstaff, Arizona. All are testimony to the fact that the Solar System is an active place, and objects still have the potential to hit the Earth. Even now, a number of institutions, including NASA, track which asteroids may come close to, or even hit the Earth. When and where will the next Tunguska happen? No one knows. But it is a reminder of our fragile world and how close we can be to destruction.

Sources:

Sagan, Carl. Cosmos. New York:Random House, 1980
"Tunguska Event" http://en.wikipedia.org/Wiki/Tunguska_event/
"Tunguska Event" http://www.answers.com/topic/tunguska-event

Astronomical Trivia

The trivia question from the last issue: What was the name that William Herschel wanted to give the new planet he discovered in 1883? Both Marty Roberts and Randy Steiner had the correct answer: *Georgum Sidus* ("George's Star"). Herschel wanted to honor his patron, King George III of England*, but scientific colleagues persuaded him to stick to more traditional mythic names, and eventually he settled on Uranus.

This issue's astronomical trivia question:
Two of the 20th century's most famous astronomers were both born and raised in Missouri, in fact, not that far from each other. Although they worked together for a time, they eventually became bitter rivals. Who were they, and at what institution were they colleagues?

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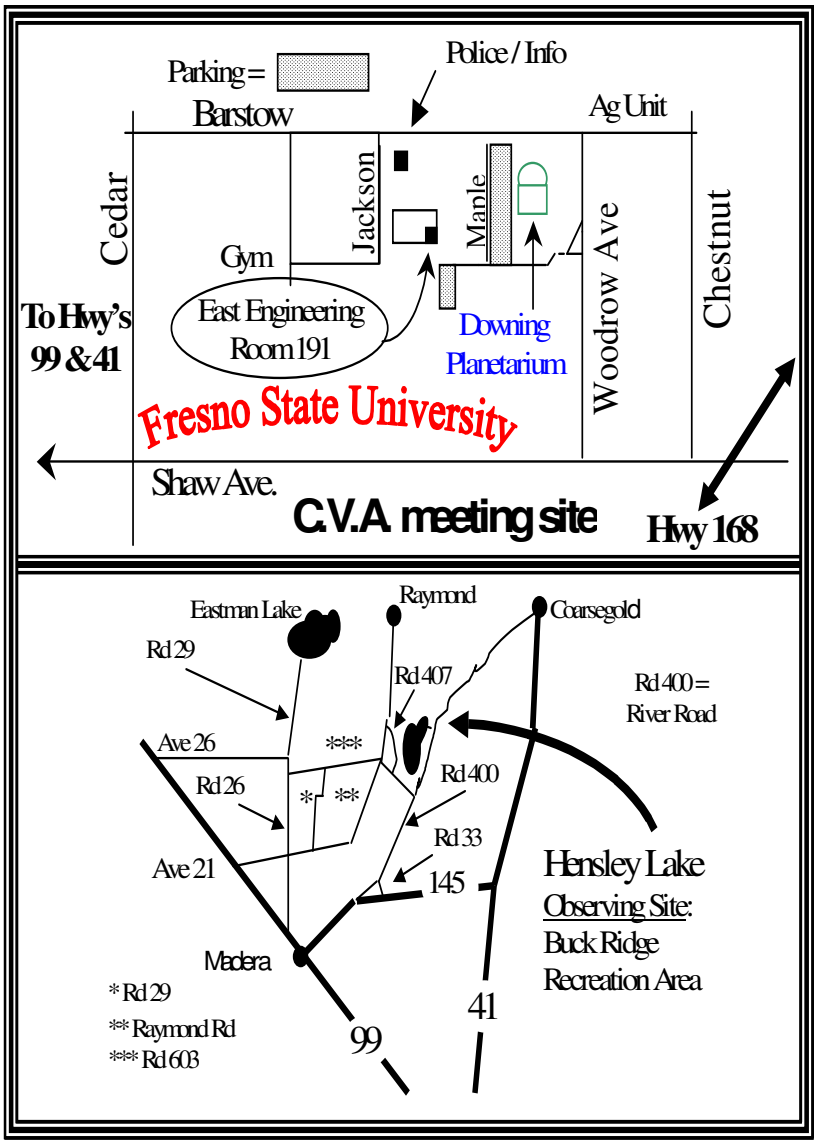
Deadline for articles submission to the July-August 2008 ***Observer*** will June 10 and the issue will be mailed June 20
(the early dates are due to summer vacation plans)

Please submit articles in Microsoft Word format

Astronomical Joke

What did the horseman general tell his troops?

"I'm the Alpha Centauri."



*King George III(1738-1820)

The opinions of the American colonists not withstanding, George III was, at least in his younger years, a fairly intelligent man with a strong interest in science and technology. He enthusiastically supported England's Industrial Revolution, was a member of the Royal Society and kept up with the latest scientific discoveries, took an active role in the controversy involving the longitude problem, amassed a huge collection of books(which later formed the basis of the British Library), and even built his own astronomical observatory at Whitehall Palace, which he used at every opportunity. Also, being of German descent himself, he persuaded many German scientists, like William Herschel, to move to England. However, his administrative and political policies were unquestioned disasters. After about 1790, he became increasingly eccentric, and was mentally ill the last twenty or so years of his life. Having fifteen children will probably do that.

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This would be a good place to insert a short paragraph about your organization. It might include the purpose of the organization, its mission, founding date, and a brief history. You could also include a brief list of the types of products, services, or programs your organization offers, the geographic area covered (for example, western U.S. or European markets), and a profile of the types of customers or members served.

It would also be useful to include a contact name for readers who want more information about the organization.

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Back Page Story Headline

This story can fit 175-225 words.

If your newsletter is folded and mailed, this story will appear on the back. So, it's a good idea to make it easy to read at a glance.

A question and answer session is a good way to quickly capture the attention of readers. You can either compile questions that you've received since the last edition or you can summarize some generic questions that are frequently asked about your organization.

A listing of names and titles of managers in your organization is a good way to give your newsletter a personal touch. If your organization is small, you may want to list the names of all employees.

If you have any prices of standard products or services, you can include a listing of those here. You may want to refer your readers to any other forms of communication that you've created for your organization.

You can also use this space to remind readers to mark their calendars for a regular event, such as a breakfast meeting for vendors every third Tuesday of the month, or a biannual charity auction.

If space is available, this is a good place to insert a clip art image or some other graphic.



Caption describing picture or graphic.