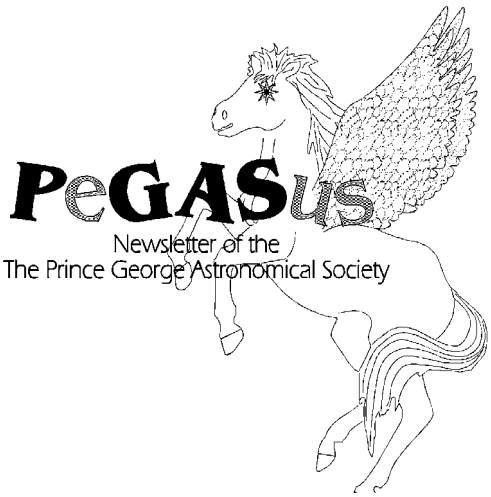
PeGASus
Newsletter of the
Royal Astronomical Society of Canada
Prince George Centre

March 2006

Our pursuits are out of this world.
Our activities are astronomical.
Our aim is the sky.

In Issue # 150



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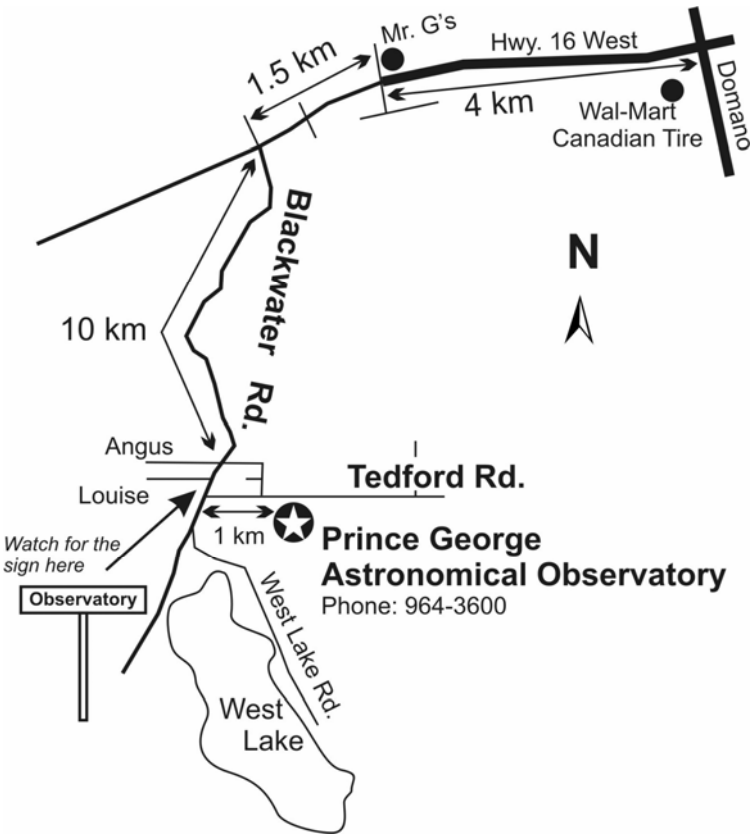
The RASC-PG meets next at 7:45 pm Thursday March 30, at The Observatory

Please Note
This Months Meeting On
THURSDAY
March 30



Contributions to the newsletter are welcome.

Deadline for the next issue is

April 14

PeGASus Editor

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Coming Events

Open Houses run every Friday evening starting in March
Members Nights run every Saturday evening alternating with NOVA
Executive meeting 6:30 pm March 30
Followed by
PGAS General meeting 7:45pm at the observatory

Editorial

Gil Self

Now this is something of a milestone, issue number 150. I took over as editor, I think as far back as issue 39. Orla Aaquist the editor at the time was moving on to teach in Alberta, and left me a very well done newsletter to continue. PeGASus has always been an integral part of PGAS. It has been almost entirely "ours". We have always tried to print new material from members. The newsletter is archived at CNC, the public library, and on our website, That brings up an interesting point, do an internet search for astronomy related topics, you will be surprised how often you will get links to our newsletter, which says people are using and accessing our website and reading the newsletter. There are still some things I would like to add to the newsletter, first on my list would be more brief simple articles from general members. Just writing astronomy related experiences you have had. Maybe a summer trip or a visit to a museum or science centre, or maybe to another observatory. I would also like to find one or two members willing to take on a monthly or bi-monthly series on a topic of their choice. Maybe you are interested in relativity or black holes, take us along as you learn.

As President I would like to make this the year we turn an important corner. Simplify, delegate and share.

These last few years we have taken on a lot of new members. We are also providing more member services than ever before. Our booked tours are down a bit but Maurice is working hard on ensuring we have enough tours to keep the bills paid.

What I want to do is simplify, make sure that no one is spending so much time it becomes a burden. We can reduce the amount of time needed to make decisions by sharing ideas electronically. We have the technology lets use it. There has been some resistance to this but I think as we learn to use the medium it will shortcut us to better use of our time. You can't improve without some change.

Delegate, we have some very capable people in the society, lets give them a job to do and leave them be. If they ask for help– be there to help, but trust them and they will come through. (but give them a max budget before they agree to what they are taking on) .

Share, if someone says there is too much for them to do, find a way to fix that. This is probably the most important part, because this is how you loose valuable people. Sharing the work is also one of the fun parts, a well organized work bee is actually a fun day.

One of the very best things we have done in the last few years is members night, and I support it fully. This is the very best time for new members to come out and get acquainted, share some of what they know, learn some of the equipment we have and maybe really get involved.

Gil

The Night Sky for April 2006

by Bob Nelson, PhD

As I write this (early March), it is a lovely Saturday afternoon out, sunny and warm (+6°C), and the ice on my driveway is melting nicely. My wife and I returned two weeks ago from a very enjoyable trip to South America (mid-January to mid-February). Summer was in full force there in Santiago; however, we spent most of our time in Patagonia, at the southern tip of the continent. In moderate temperatures and good weather we had some great hikes amid the very spectacular mountain scenery in the finest parks that Chile and Argentina have to offer. We also visited Ushuaia, on the Beagle Channel on Tierra del Fuego, a place that I have long wanted to visit. A catamaran trip revealed some wildlife treasures -- colonies of sea lions, cormorants and other birds, but alas – no penguins (it was too rough to go that far). However, we did see a fine penguin exhibit near Punta Arenas (back in Chile). You walk along a boardwalk and can get quite close to the little chaps and see all their antics.

Back in Santiago, we again rented a car and travelled over the main pass to Mendosa. From there we went north and drove over Passo de Agua Negra, (at 15,600 feet elevation!!) to end up near La Serena for two observatory tours next day. I'll have more to say at the monthly meeting where I hope to show a selected set of images of the trip.

Meanwhile, I have to go and help out at the Recreation Mart this afternoon.

Here is what is happening in our skies next month:

MERCURY is a morning object all month. At mid-month it rises at **05:48 (PDT)** and lies very low (3° up) in the east at sunrise. It's a tiny 7" disk of magnitude 0.2.

VENUS, a morning object all month, rises on the 15th at **05:00 (PDT)** and lies 9° above the ESE horizon at sunrise. It's a 20" disk of magnitude -4.2.

MARS, in Taurus until April 14, when it passes into Gemini, is an evening object all month. On the 15th, it lies some 50° above the SW horizon at sunset and sets at **02:26 (PDT)**. It's a 5" disk (tiny!!) of magnitude 1.4.

JUPITER, in Libra until December, rises at mid-month at **21:50 (PDT)** and transits at around 01:30 (PST) It's a 44" disk of magnitude -2.5.

SATURN, in Cancer until August, is well placed for evening viewing all month. On the 15th, it lies a whopping 56° above the SSW horizon at sunset; it does not set until **04:09 (PDT)** next morning. It's a 19" disk of magnitude -0.1.

URANUS, in Aquarius until 2009 (March), is a morning object all month. On the 15th, it rises at **05:13 (PDT)** and lies 8° above the ESE horizon at sunrise. As usual, it's a 3.6" disk at about magnitude 5.7.

NEPTUNE, in Capricornus until 2010 (March), is a morning object all month. At mid-month, it rises at **04:28 (PDT)** and lies 12° above the SE horizon at sunrise. As usual, it's a 2.3" disk at about magnitude 8.0.

PLUTO, in Serpens until September, rises at mid-month at **00:47 (PDT)** and lies 29° above the southern horizon at sunrise. As usual, it's a 0.1" disk at magnitude 13.8

Daylight savings time returns (boo, hiss!).

CONSTELLATIONS to look for in April (at 10 PM, PDT) are Central Hydra, Crater (Crt), Sextans, Leo and Leo Minor.

Central Hydra ("The Sea Serpent", not to be confused with Hydrus, "The Water Snake" - WAY to the south, hence the "s" at the end of the constellation name) is out of the Milky Way and contains two galaxies: NGC 3923 and 3621. The former is a 2.0' x 1.2' ellipse of magnitude 10.7; the latter, a 12' ellipse of magnitude 10.0. One of the catalogues in Guide 7 tells me that NGC 3923 is travelling away from us at some 1400 km/s and is therefore about 20 megaparsecs (64 million light-years) away, using Ho = 70 km/s/Mpc for the Hubble constant.

Crater ("The Cup") contains galaxies NGCs 3672, 3962, and 3887 plus the 6th magnitude variable star SY Crt. (The Hipparcos catalogue -- available in Guide 7-- tells us that it's a slow irregular variable of spectral type M3 III (that makes it a cool red giant) and is 570 times as bright as the Sun and lies 570 light years away.)

Sextans ("The Sextant") contains the galaxies NGCs 2974, 3115, 3166, and 3169.

Leo ("The Lion") is familiar to most of us. It's a constellation that actually resembles what it's supposed to be. The head of the beast, on the right, contains at its base the first magnitude star Regulus. It also contains numerous galaxies (almost to many to mention) M65, 66, 95, 96, 105, plus NGC 3628, 3384, 2903. Those from the first group are typically 10th magnitude and 5-10' in size. The latter group are generally fainter, typically 11th magnitude (NGC 2903 is 9.5) and smaller 3-5' (NGC 2903 is 12.5'). Note that M65 and 66 is a famous pair visible in the same field of view.

Leo Minor ("The Little Lion") contains galaxy NGC 3344 (10.4 mag, 7.2' in size).

Clear skies,
-Bob

Planets in Strange Places

By Trudy E. Bell

Red star, blue star, big star, small star—planets may form around virtually any type or size of star throughout the universe, not just around mid-sized middle-aged yellow stars like the Sun. That's the surprising implication of two recent discoveries from the 0.85-meter-diameter Spitzer Space Telescope, which is exploring the universe from orbit at infrared (heat) wavelengths blocked by the Earth's atmosphere.

At one extreme are two blazing, blue "hypergiant" stars 180,000 light-years away in the Large Magellanic Cloud, one of the two companion galaxies to our Milky Way. The stars, called R 66 and R 126, are respectively 30 and 70 times the mass of the Sun, "about as massive as stars can get," said Joel Kastner, professor of imaging science at the Rochester Institute of Technology in New York. R 126 is so luminous that if it were placed 10 parsecs (32.6 light-years) away—a distance at which the Sun would be one of the dimmest stars visible in the sky—the hypergiant would be as bright as the full moon, "definitely a daytime object," Kastner remarked.

Such hot stars have fierce solar winds, so Kastner and his team are mystified why any dust in the neighborhood hasn't long since been blown away. But there it is: an unmistakable spectral signature that both hypergiants are surrounded by mammoth disks of what might be planet-forming dust and even sand.

At the other extreme is a tiny brown dwarf star called Cha 110913-773444, relatively nearby (500 light-years) in the Milky Way. One of the smallest brown dwarfs known, it has less than 1 percent the mass of the Sun. It's not even massive enough to kindle thermonuclear reactions for fusing hydrogen into helium. Yet this miniature "failed star," as brown dwarfs are often called, is also surrounded by a flat disk of dust that may eventually clump into planets. (Note: This brown dwarf discovery was made by a group led by Kevin Luhman of Pennsylvania State University.)

Although actual planets have not been detected (in part because of the stars' great distances), the spectra of the hypergiants show that their dust is composed of forsterite, olivine, aromatic hydrocarbons, and other geological substances found on Earth.

These newfound disks represent "extremes of the environments in which planets might form," Kastner said. "Not what you'd expect if you think our solar system is the rule."

Hypergiants and dwarfs? The Milky Way could be crowded with worlds circling every kind of star imaginable—very strange, indeed.

Keep up with the latest findings from the Spitzer at www.spitzer.caltech.edu/ . For kids, the Infrared Photo Album at The Space Place (spaceplace.nasa.gov/en/kids/sirtf1/sirtf_action.shtml) introduces the electromagnetic spectrum and compares the appearance of common scenes in visible versus infrared light.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

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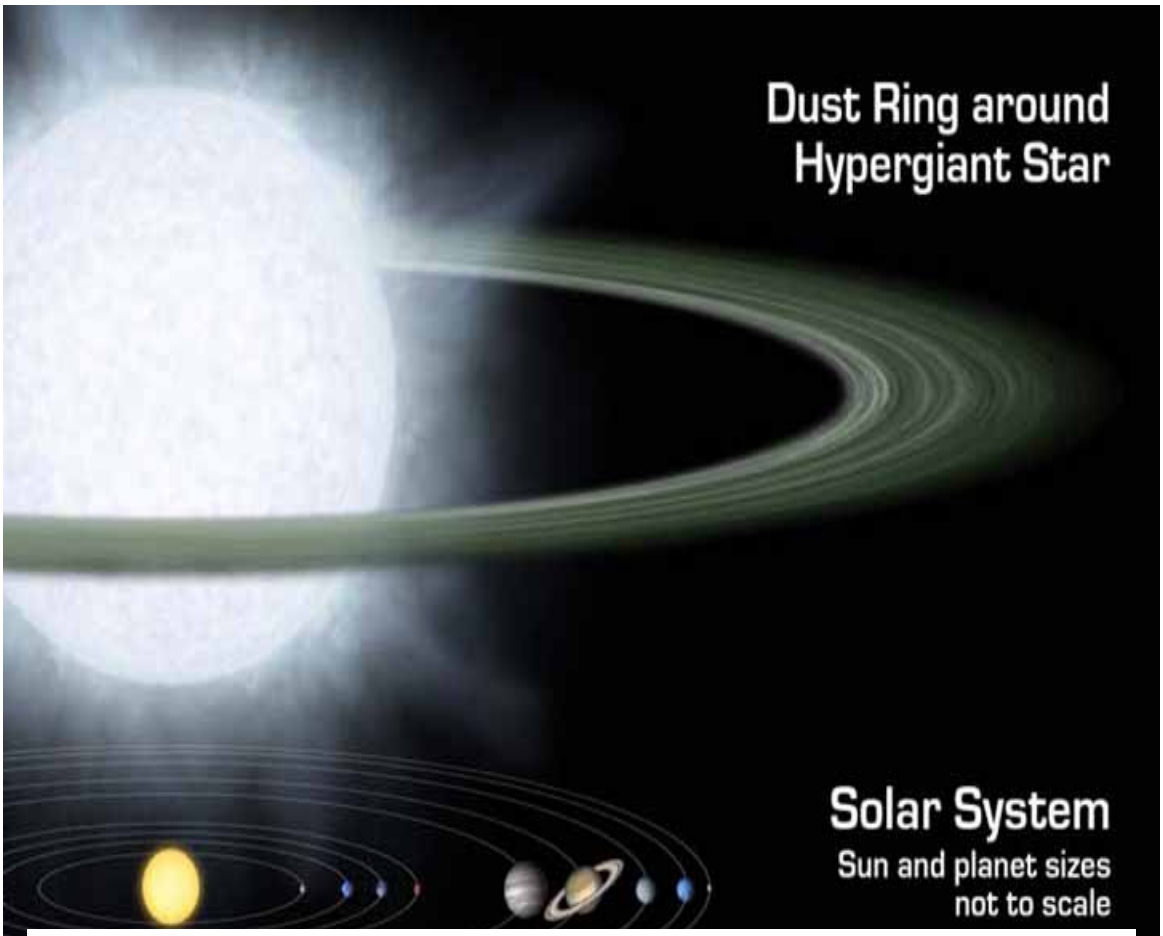
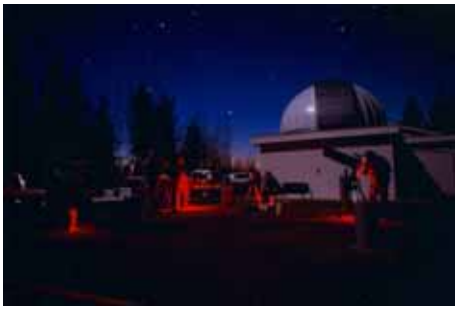
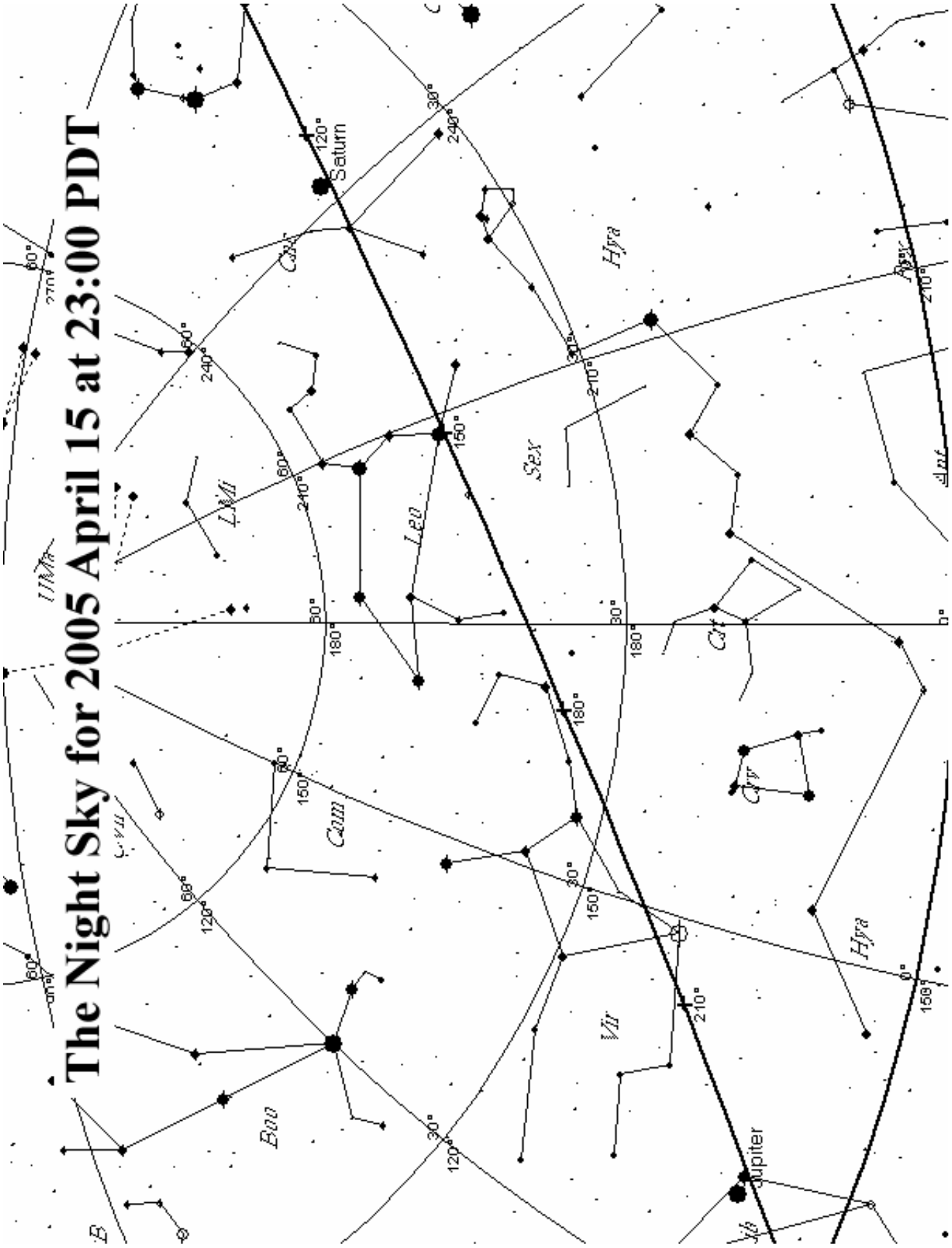


Caption:

Artist's rendering compares size of a hypothetical hypergiant star and its surrounding dusty disk to that of our solar system.



Map courtesy Dr Bob Nelson



November Guide Tour

On Nov 16, 2005 we hosted a tour of about 60 Girl Guides and parents. We were very fortunate to have a clear night, which have been few and far between lately. There was a full moon, but it illuminated the scene very well. Wayne and Maurice did presentations in the classroom and gave them views of Mars in the big 24" scope in the dome. Glen, Jim A. and I showed them sights in the sky from the viewing area outside. Glen did a great job, using the green laser to point out constellations and then talk about the ancient lore associated with each. Jim and I gave views of double stars, clusters and the moon in our scopes. It was a great evening and all were happy with the tour.

I have attached a photo I took, which I think captures the scene well. Because of the long shutter opening, the people look like ghosts as they move around.

It was done with a Canon F1 35mm camera, 28mm lens set at f4 for 2 minutes on Kodak Gold 200 film.

Doug Wayland

An Article That was missed in the November Issue,
Thanks Doug