

---

---

FALL 2008

VOLUME 31, NO. 3

★

---

---

# MIRA

---

---

## NEWSLETTER



MIRA Image

## Safe in a Sea of Ash

The ash and charred trees surrounding MIRA's Oliver Observing Station bear witness to the multiple devastating advances the Basin Complex Fire made on Chews Ridge in July. Photograph by Dr. Bruce Weaver from an aircraft piloted by MIRA Board member Ron Gaasch. The full story of the OOS and the Basin Fire begins on page 3.

---

---

**Contents**

Calendar	2
News Items	2
Astro-Bloopers	2
My Summer at MIRA	2
The Basin Complex Fire in Words and Pictures	3-5
The Fall Sky	6-7

**Calendar of Events**

**Saturday, 6 December, 4:30pm.** MIRA Holiday Potluck. at the Hamming Astronomy Center. A raffle and viewing from the Weaver Student Observatory will be part of the program.

**Los Padres National Forest Remains Closed**

Much of Los Padres National Forest, including Chews Ridge and the Oliver Observing Station, remains closed to the public because of ongoing hazards due to the Basin Complex and Indians Fires.

Accordingly, MIRA has had to cancel scheduled and planned activities at the OOS. We hope to be able to resume normal activities next spring.

**Astro-Bloopers**

Your *Newsletter* editor is always on the lookout for more literary astronomical gaffes. These two were sent to us by Dr. Ana Torres-Dodgen, who was a research astronomer at MIRA for several years. She uses our collection in her current college classes and is adding more every year.

From *The Press and Journal* (Aberdeen), October 1984:

“Scientist Finds Proof of Plant Life on Star”

“The strongest evidence yet that plants surround a nearby star has renewed speculation about possible life on other worlds, says an astronomer who took the first photograph of what may be a young solar system ... the first evidence that some of the material around one of those stars-Beta Pictoris-has coalesced to create plants.”

From Kenneth Oppel’s novel *Sunwing*

“The stars are different here,” said Chinook ... “How are we going to know where north is?” “We’ll use the setting sun,” Shade said. “That tells us east, and we guess at north. We fly high enough, and keep the glow on the horizon as long as we can, and reset our course every twilight.”

**My Summer at MIRA**  
by **Richard D. Mellinger, Jr.**

I thought he might be kidding when Homer Bosserman of Monterey Peninsula College asked me if I would be interested in a summer internship with MIRA. Fortunately, he wasn’t kidding, and I wasn’t dreaming.

The time I spent working with Dr. Bruce Weaver at MIRA has been some of the most intellectually stimulating and rewarding of my educational career so far. Despite the Basin Complex Fire, which made the observatory inaccessible most of the summer, I was able to gain first-hand experience and insight into the world of an astronomer, and I’m hooked. Luckily, most of astronomy is done on a computer forty miles away from the observatory. I was fortunate enough to do everything from computer drafting of a real piece of equipment to data reduction with MIRA’s own software, from working in the machine shop to stuffing envelopes, from running cables at the observatory to talking with some of the most interesting people I’ve ever met. Discussing things like college, life, culture, reading, food, and of course... astronomy. I was even fortunate enough to see the process of creation in its entirety, of a piece for one of the spectroscopes: designed, machined, applied, and tested.

My only regret is that I had so little time to spend working with the exceptional men and women who make up the Monterey Institute for Research in Astronomy. I would return next summer in a heartbeat, if at all possible.



*Richard Mellinger adjusts an optical bench at MIRA.*

# The Basin Complex Fire

Photos by Ivan J. Eberle and Dr. Wm. Bruce Weaver

The summer of 2008 was a season for which we had prepared for years and feared for decades. The Oliver Observing station, perched atop Chews Ridge, is the focal point for fires from almost any direction. We were particularly apprehensive about the eastern side, with the steepest slopes soaring above Piney Canyon, where, before the OOS was built, flames roared hundreds of feet into the air during the Marble Cone Fire of 1977.

With the dry winters of 2007 and 2008, we redoubled our efforts to clear brush around the observatory. The massive Indians Fire earlier in the summer prompted us to fill our large firefighting water tank to the brim and replace our aging fire pump and hoses. At first, all the firefighting resources were dedicated to the west side of the Basin

Complex Fire in Big Sur but, luckily, an early air attack requested by CalFire nearly extinguished the east side, closest to the observatory. By the time the east side recovered its strength, bulldozers and hand crews were available to extend the firebreaks around the observatory and prepare the Piney Canyon side for a burnout.

On 12 July, the first attack came from the south-east over Black Butte and the fire crews were ready. Large bulldozed areas protected the solar panels and the wind turbine and the eastern slope was cleared with a controlled burnout. With a tremendous sigh of relief, we felt the fire had now passed and the worst had been avoided. We went

to bed happy and the fire crews went off to deal with other fronts.

At 5 am the next morning, the fire roared up across the MIRA road cresting across the tops of large pine trees. Quick thinking and work by Ivan, our caretaker, with most of our water supply and new pump and hoses, stopped the fire as it rounded the observatory and attacked toward the propane tanks on the north side of the building. The fire roared down the north side of Chews Ridge and became

the "Oops!" breakout that threatened Cachagua and Carmel Valley for the next two weeks. Again, we thought we were done with the fire.

But on the 18<sup>th</sup> of July, the fire made a third run at the OOS, this time taking a second run up Piney Canyon. Luckily, the earlier controlled burn-

outs kept it at bay and the U.S. Forest Service attacked it by air and ground. This was a weaker advance and the fire had clearly lost strength in our direction.

Or not! The final assault on the 23<sup>rd</sup> of July surprised us as the fire jumped the Tassajara Road to the west of us in many locations and zoomed up through the meadow below the observatory. While the fire mostly charred the ground cover, several old oaks and some pine trees succumbed. We're not yet sure if most of the 104-year-old pine trees in the meadow were killed as well.

Three weeks later, the ash was pierced with hundreds of cheerful ferns, restarting life in the forest.





A firefighting helicopter returns from a water dump. Note the towline.

Smoke billows 

east of the MIRA solar panels and wind turbine as the Basin Complex Fire makes a third run at the OOS.



 In the first attack, 400-foot-high flames southeast of the OOS. Copyright Ivan

 The Basin Complex Fire advances into west of the OOS.

In the third advance, the fire burns pre trees in the steep Piney Canyon directly



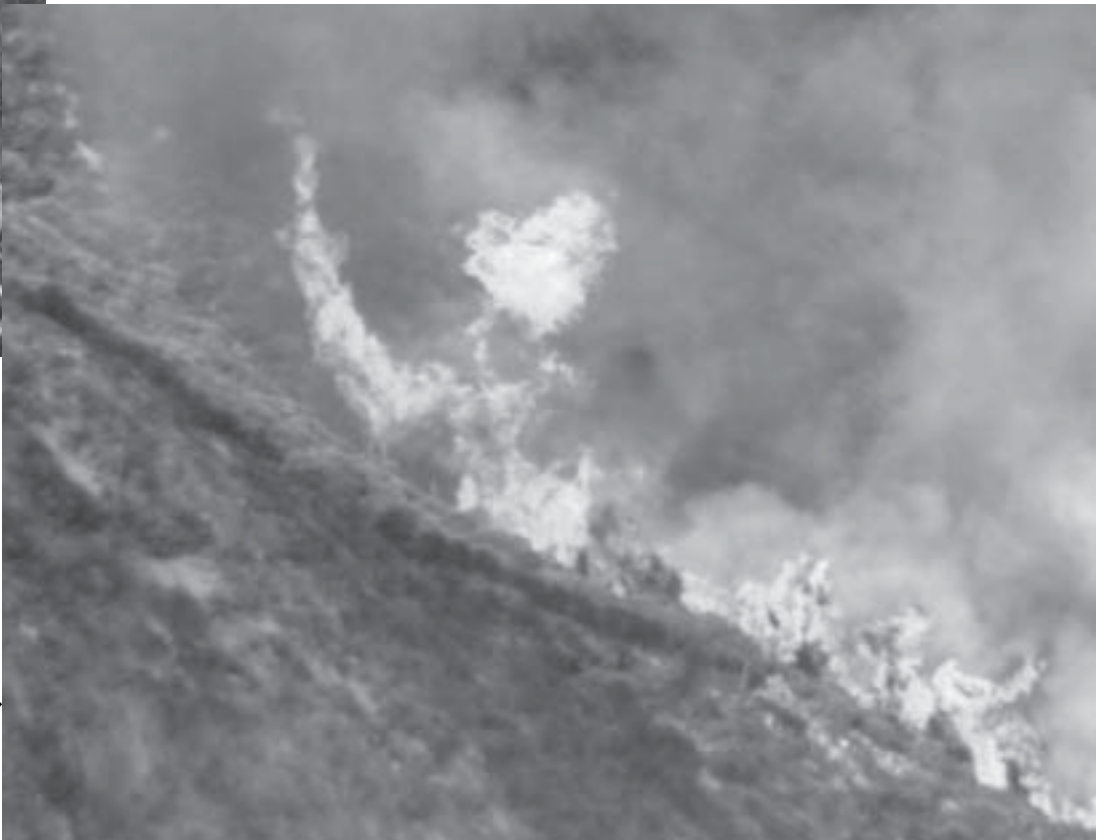
↑ With flames advancing from Black Butte, firefighters burn over the upper reaches of Piney Canyon. OOS caretaker Ivan Eberle climbed the wind turbine tower to capture this image. Copyright Ivan J. Eberle. Used by permission.

↩ The surprise second advance charred the trees and brush as the fire approached the propane tanks north of the OOS, just visible in the upper left corner of the picture.

es race up the south side of Black Butte,  
n J. Eberle. Used by permission.

o the valley to the

viously passed-over strips of brush and  
y east of the Observing Station.



# The Fall Sky

by Rod Norden

The still-warm fall evenings are great for observing, as the sun is setting earlier, giving us longer nights. In the early fall, the Summer Triangle moves overhead and into the west. The stars of winter are beginning to appear in the east later in the evenings.

While October, November and December skies appear more devoid of bright stars than those of the summer, the fall sky is rich with many special objects.

## Fixed Stars

For naked eye observers, the Great Square of Pegasus dominates the sky. It can be used to locate many other constellations around it. One of the things I enjoy doing with the Square is to count the number of stars I can see in it after becoming dark adapted. I read of this technique in *Sky & Telescope* many years ago. From the very few stars I can see from my house in Santa Cruz to the many stars I can count from a really dark sky, I always learn something more about using averted vision to practice seeing faint objects. If you can see more than 35 stars in the Square, then your limiting magnitude is 6.5.

One of my favorite beginner's objects is Messier 31 in Andromeda. At a bewildering 2.5 million light years from earth, it is the farthest object one can see readily with the naked eye, and it is even better in binoculars. A common question at star parties is "How far can you see with this telescope?" and with M31, you can give an amazing answer to that question. I love pointing it out in dark skies to the public using a laser pointer to amaze them with just how far one can see without a telescope.

I was shocked at the actual size in the sky of the giant Andromeda Galaxy on the old Palomar Sky Survey (now available online at <http://archive.stsci.edu/dss/>). Its size is difficult to appreciate in a large telescope. With a moderate-aperture telescope, it is interesting to observe some of

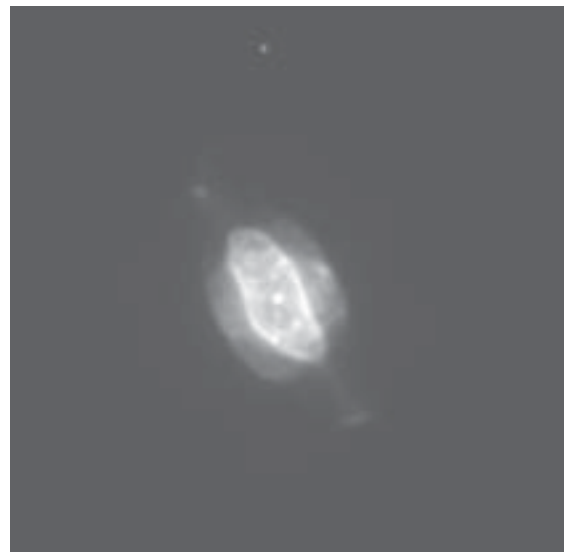
the reasonably bright globular clusters that are shown on good finding charts. This was one of my favorite things to do in the fall with my 18" reflector, but several of them have been seen in telescopes as small as 6" to 8" aperture.



M31, the Andromeda Galaxy. Image by Chris Deforeit.

There is one additional fall object which deserves mention. Using the 40" Nickel reflector at Lick Observatory recently, we were examining various planetary nebulae that can be found in the fall. One of the planetaries visible in smaller telescopes was NGC 7009 in Aquarius, better known as the Saturn Nebula. In the 40" Nickel, the central 11.5 magnitude star was easily visible in a bright bluish-green oval with wings and arcs just

above and below the main oval without any filter. I used to enjoy it some of its details with my 18" with OIII filter, but I have seen it with an 8" telescope using the same filter



*The Saturn Nebula, so called because the faint extensions are reminiscent of the planet Saturn. Bard Ehrhorn/Adam Block/NOAO/AURA/NSF*

at 200x, since it is only 36 arc-seconds across. With what aperture can you see color and any detail in or near the small oval disc?

### Planets

**Mercury** is very well placed for morning observation during late October, but spends most of the fall very close to the sun until December when it passes within a few degrees of Venus and Jupiter.

**Venus** will become easy to see in the evening sky in November, and by the end of December will be 21" in diameter, 58% illuminated, and shining at magnitude -4.4 within a few degrees of Jupiter.

**Earth** has its shortest day in late December. The Winter Solstice occurs at 4:04 AM PST (12:04 UT) on 21 December, as the sun is overhead at the Tropic of Capricorn. Interestingly, the earliest sunset and the latest sunrise do not occur on this shortest day, but on 4-5 December (earliest sunset) and 4-5 January (latest sunrise).

**Mars**, less than 4" in diameter for the rest of the year, is in conjunction with the sun on 5 December.

**Jupiter** transits the meridian (directly south) near sunset in October, and gradually approaches the sun as the year progresses. In December, it will appear very close to Mercury, Venus and the moon.

**Saturn** remains visible in Leo in the morning sky rising earlier each day, until it rises at midnight in late December. Note that the rings are becoming less visible through the rest of the year as we approach ring plane crossing in 2009. The ring inclination decreases from 2.8 in October to 0.8 degrees at the end of the year. The last ring plane crossing occurred in late 1995 and the rings were open widest in 2003.

**Uranus** was at opposition on 13 September in Aquarius at magnitude 5.7. Through a telescope, its greenish disk 3.7" in diameter can be seen. It will remain visible with binoculars and telescopes the rest of the year.

**Neptune** was at opposition on 15 August in Capricornus at 8th magnitude, remaining visible in binoculars and small telescopes the rest of the year. It will be creeping closer to the sun the rest of the year.

**Pluto** (our dwarf planet) is moving ever closer to the sun this fall at 14th magnitude in Sagittarius, and will be in conjunction with the sun on 22 December.

### Meteor Showers

The three major fall showers are all adversely affected by the moon this year. The 21 October Orionids, 17 November Leonids, and the 13 December Geminids have

maxima that occur near full moon. Other less well-known showers provide possibly better opportunities for amateurs. The Southern and Northern Taurids have broad maxima occurring from late October (good moon) through the first half of November. Two possible swarm events are predicted for the above showers in 2008 during which the numbers of bright fireballs may increase. Previous such events occurred in 1995, 1998, and 2005. There are also two predictions for minor Leonid swarms on 17 November, so keep an eye for slightly elevated numbers this year, but less than 1998-2002 events.

### Comets

There are a few interesting comets in the fall sky this year. **Comet C/2008 A1 (McNaught)** begins October in Libra at 7<sup>th</sup> magnitude and fades to 10<sup>th</sup> magnitude in Ophiuchus low in the evening sky through the rest of the year. **Comet 6P/d'Arrest** spends the fall moving eastward low in the south below Fomalhaut fading from 8<sup>th</sup> magnitude in October to 12<sup>th</sup> by year's end. It was discovered in 1851 by the assistant of Johann Galle on the night Neptune was found. **Comet 85P/Boethin** may reach 7<sup>th</sup> magnitude later in the fall as it moves from Capricornus to Pisces. The Deep Impact spacecraft, whose impact produced so much data in 2005, is expected to pass within 500 km of the comet's nucleus on 5 December.

Many of the comets we have been describing this year have been discovered by the same small group of astronomers looking for near-Earth objects or NEOs. The Catalina Sky Survey's three contributing surveys (two by the University of Arizona and a third at Australia's Siding Spring Observatory) have made many of these contributions. Most of these have been discovered by McNaught and Boattini. In fact, **Comet McNaught C/2006 P1** was the brightest comet seen in several decades.

One of their discoveries is of special interest to me. **Comet P/2008 J2 (Beshore)** was discovered in May at CSS by my good friend, Ed Beshore, who worked with me at University of Arizona on various research projects under the late Dr. Raymond E. White, one of the finest professors I've ever had in any subject. Dr. Bruce Weaver also took classes from him during his days at University of Arizona in 1964-68, before Ed and I arrived.

### Eclipses

There will be no eclipses visible from Central California this fall. MIRA is planning a benefit trip to China to see the July 2009 eclipse in which totality will last nearly 7 minutes. There is an optional extension to Tibet. Please contact Tami at MIRA at 883-1000 for more details.

## Friends of MIRA Membership

I would like to become a Friend of MIRA and receive the quarterly MIRA Newsletter.

Enclosed is my membership donation of \$ \_\_\_\_\_

In addition, I am making a special contribution of \_\_\_\_\_

\$2500 Associates Circle	\$100 Sponsor
\$1000 Associate	\$50 Family
\$500 Patron	\$35 Member
\$250 Sustaining	\$15 Student

*MIRA welcomes corporate and business members. Contributions are tax deductible as allowed by law.*

Name \_\_\_\_\_

Address \_\_\_\_\_

City, State, Zip \_\_\_\_\_

Phone/e-mail \_\_\_\_\_



MIRA Photo

*Kaitlyn Huntley helps with the mailing chores at MIRA.*

## Staff

Gordon Jones, Chair, Board of Directors  
Dr. Wm. Bruce Weaver, Astronomer & Director  
Tami Huntley, Administrator  
Dr. Arthur Babcock, Astronomer  
Bill Bishop, Volunteer Systems Administrator  
Dr. Craig Chester, Astronomer  
Dr. Martin Cohen, Astronomer  
Donna Dulo, Docent  
Ivan J. Eberle, OOS Caretaker  
Brian Jacobson, Docent  
Jim Neeland, Volunteer Systems Administrator  
Claas Shane, Librarian  
Dr. Whitney Shane, Astronomer & Charles Hitchcock  
Adams Fellow  
Dr. Russell Walker, Astronomer

\* \* \*

The Monterey Institute for Research in Astronomy owns and operates the Oliver Observing Station under permit from the U.S. Dept. of Agriculture-Forest Service.

\* \* \*

The Monterey Institute for Research in Astronomy owns and operates the Richard W. Hamming Astronomy Center and the Ralph Knox Shops through an arrangement with the U.S. Dept. of Education.

Visit our Web site and *Field Trips to the Stars:*  
[www.mira.org](http://www.mira.org)  
E-mail us at [mira@mira.org](mailto:mira@mira.org)

**Monterey Institute for Research in Astronomy**  
200 Eighth Street  
Marina, CA 93933

(831) 883-1000  
(fax) (831) 883-1031  
[www.mira.org](http://www.mira.org)



NON-PROFIT ORG.  
U.S. POSTAGE  
PAID  
PERMIT NO. 16  
MARINA, CA 93933