

SIRIUS ASTRONOMER

NEWSLETTER OF THE ORANGE COUNTY ASTRONOMERS
See our web site at <http://www.chapman.edu/oca/>

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The Riverside Telescope Makers' Conference (RTMC) Official Club Photo! Admittedly, we were hard pressed to keep still for the few minutes it took to take these shots---so much was going on! Other OCA members were scattered all over the site as well. Nevertheless, a grand ole' time was had by one and all!

CHAPMAN MEETINGS

The next meeting of the OCA is on Friday, July 9, at 7:30pm in the Science Hall of Chapman University in Orange. The free and open meeting will feature amateur astronomer Francesco Finizio, who will discuss his research on M110. There will also be a "What's Up?" presentation by Chris Butler and "Astro News" by Russell Sipe.

STAR PARTIES

The Silverado site will be open for observing on Saturday, July 17. The Anza site and Observatory will be open Saturday, July 10. Come prepared for medium to chilly weather, and if in doubt, check the satellite weather pictures before leaving town or call the observatory.

COMING UP

The Orange County Astronomers will be represented at the Orange County Fair on Friday and Saturday, July 17 - 18. Your assistance is greatly needed. See page 10 for more details.

The President's Message

by Russell Sipe

When Al Gore was elected Vice-President of the United States I am sure he never envisioned a scenario wherein Bill Clinton would resign as president because he was laid off from his job and had to leave the area to find work. Similarly, that scenario never occurred to me when I was elected VP of OCA. However what Congress could not do to Bill Clinton, Boeing unfortunately did to Wayne Johnson. At the June OCA meeting Wayne regretfully resigned as president of OCA in preparation for taking on a new job with Raytheon in Tucson Arizona. In appreciation for his leadership he received a standing ovation from a grateful club.

This was Wayne's second stint as president of OCA. He is a member of a select group of men and women who, as past presidents, have lead this club from its humble beginnings in the early 1970's to its current position as the largest local astronomy club in the country, perhaps in the world. Thank you Wayne.

So, following board confirmation, I, Russell Sipe, am now your new president. There are several humorous things I could say at this point, but I am going to resist. No, really. For those of you that don't know me, let me give you a short bio. I have been a member of OCA since 1983 when I became heavily involved in astrophotography. In the early 90's I hung up my developing apron and dumped my processing chemicals (in an environmentally safe manner) to join the light bucket crowd with an 18" Obsession dobsonian. My "other scope" is a Takahashi FS-104. Later this year I will finally be joining the ranks of the CCDed.

After selling my magazine publishing business in 1993 I became involved in the Internet and started what turned out to be a very popular astronomy site: www.halebopp.com. These days I am the webmaster of Sky & Telescope's web site (www.skypub.com). I am also the webmaster of the OCA web site at www.chapman.edu/oca. If for some strange reason, you want to know more than that you can check out my personal web site at www.sipe.com. In July I will be attending the 111th annual meeting of the Astronomical Society of the Pacific in Toronto. Wayne will be attending as well. The event is being held in conjunction with RASC and the AAVSO (the Royal Astronomical Society of Canada and the American Association of Variable Star Observers). The combined conference will feature a three day symposium on "Amateur-Professional Partnerships in Astronomy Research and Education". I will serve on a panel dealing the role of the media in am/pro partnerships.

With Wayne's departure the club is losing it's most visible research activity: his supernovae search program which has bagged six discoveries so far. During this past year I have been talking with a number of amateurs and industry figures, both in our club and elsewhere, about potential new research oriented projects for OCA, some of these perhaps Internet related. There are a number of items that the OCA board of directors have been working hard on this year, and you will be hearing about these in the days to come. One item the board has been struggling with is that expenses have risen in the past eight years without a penny of increase in dues. That coupled with our desire to move forward with a more robust commitment to astronomical education and research means that you will probably be seeing a dues increase in the coming months. Even with an increase, your OCA dues will still be one of the least expensive items you will purchase to improve your astronomical experiences in the coming year.

Don't miss the upcoming Star-B-Ques during the July and August Anza star parties. We'll give our new BBQ grill a workout. Unfortunately I will miss both events. In August I will be on the Sky & Telescope Black Sea solar eclipse cruise. If all goes according to plan you will be able to read, at the S&T web site, on-the-spot journal reports leading up to the eclipse (not video webcasts) from both the Black Sea and from S&T's other tour group which will be on the ground in Turkey.

Please email me with your suggestions and/or offers to help improve the services we offer to members and provide the local community. My email address is sipe@sipe.com. For the record, the official OCA phone number for general club business and membership information is now 714-751-5381 (Charlie and Anne Oostdyk). My phone number (which is also the Press Contact number) is 714-281-0651. Remember that there is a sizable listing of trustee, committee, and functionary phone numbers on the back page of the Sirius Astronomer.

The Goodness of the Night Upon You
Othello Act I Scene 2

Russell Sipe

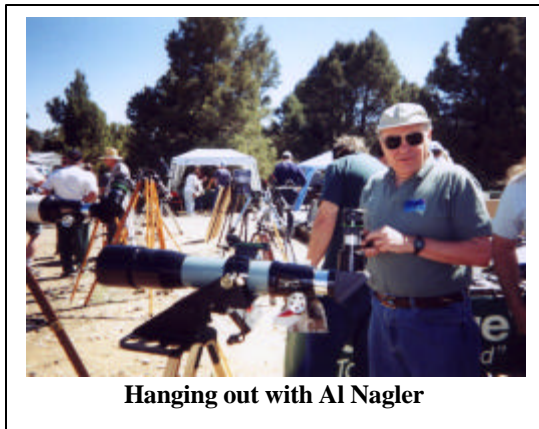
How I Bought My First Telescope

by **Christine K. McGill, Editor**

If you don't currently own a telescope, you might want to wait before you decide to buy. You might not, however, want to wait as long as I did after joining the OCA: 2 years and 9 months.

Well, I didn't want to rush into a decision. I was busy. I didn't want to make the wrong choice and commit to something I might eventually come to dislike. Cost was another factor. And, finally, there was the fact that I could always borrow one. The club has some fine telescopes for members to borrow, such as the first one I used, a 10-inch Coulter Dobsonian. So, I took matters slowly: I learned my way around the sky with my binoculars and the Dobsonian. I also learned how to use the 10-inch Meade LX-200 SCT at the Anza Observatory, with its object library and GOTO capabilities. Nice.

But, I have neither a "GOTO" nor an "ATM" personality. I could neither persuade myself to invest in an instrument that would do all the thinking for me, nor did I want to make one. Rock bottom, I just wanted a traditional telescope.



Hanging out with Al Nagler

What to buy? Well, I thank my lucky stars that I didn't run out to buy a grocery-store telescope! (I actually saw a posting to the sci.astro.amateur newsgroup that read: "What are the best brands? Who sells absolutely the cheapest? I was looking at a telescope at Wal-Mart recently...") I believe that the best way to check out telescopes is to borrow one from the club or a friend, to go to star parties and spend some time with other club members, who are very willing to answer any questions one might have, to get involved with the use and maintenance of the club's telescopes. In addition, one should read everything one can find in print or on the internet. There is an excellent website called "The Telescope FAQ" (url: <http://www.qnet.com/~starlord/TELESCOPE.FAQ>), which is only one of many. *Sky and Telescope's* pamphlet "Choosing Your First Telescope" is available from the club and from their website. In

addition, many OEMs and resellers provide general information on telescopes for the potential buyer.

As it turns out, I was looking at ads on the internet and in magazines for about 2 weeks prior to my attending RTMC. I must have made a subconscious decision, because once I arrived at Big Bear, I had to buy a telescope. I could think of nothing else. This was only my second RTMC; at my first one, my big purchase was a set of books by Brent Watson, the "Finder Charts of the Messier Objects", designed for Telrad users. Thinking about my pocketbook, I was led (or misled) first to the used telescope vendors. I almost bought a 4-inch Meade refractor, when Don Lynn showed up and talked me out of it. I walked over to the Meade booth and stopped by Al Nagler's booth as well. Nothing really excited me, though. Later, in the women's dorm, I spoke to someone whose boyfriend sells scopes, and I went and looked at it and walked away (quickly) because it was dinnertime. At dinner, I expressed my desire to buy a telescope contingent upon my failing to win one at the door prize drawing. I enlisted Don Lynn and John Sanford and felt confident that I could arrive at the right decision with the two of them along.

The following morning, we took off after breakfast, and arrived at a vendor of telescope-making kits. Uh-uh. The next booth belonged to Discovery Telescopes. I had never heard of them, but we stopped to look. The company is located in Oceanside, and they are a supplier of mirrors and telescopes to several big-name telescope companies. I grew increasingly interested, because the price range for their Newtonian reflectors was just right for me. (The company sells direct to the public.) Moreover, the telescopes on display



Photo by Dave Kodama

(several Newtonian reflectors and a Dobsonian) were attractive, with a glossy black finish and mounted on aluminum tripods. There were 4.25-, 6- and 8-inch Newtonians on display. I was drawn to the 6-inch f/5 for its cost (\$499), and asked John and Don to look at it.

The glass parabolic primary mirror showed crisp images, but I'm not an expert. My friends were impressed with the optics, and the mount appeared stable enough. Then, John reminded me of something Doug Millar had mentioned at breakfast: "Don't buy anything less than an 8-inch!" He pointed out that the 8-inch f/5 also included a DC motor drive (the RTMC special) for free, and the extra 2 inches of aperture would make a great difference. Aperture rules, right? Right! I made a deal for the telescope, which comes with a 25-mm Plossl, 2- and 1.25-inch rack-and-pinion focuser, mount and tripod (same as Orion's SkyView Deluxe EQ), the free DC drive and a 10-mm Plossl for less than \$600, and I still haven't stopped smiling!

My telescope (named Lucille) is beautiful and very portable. I can setup and break down in under 20 minutes. I've hauled it to the Silverado star party, the Anza star party, to the Discovery museum in Santa Ana, and to Jim Benet's house. I've viewed the Dumbbell nebula, Albireo in Cygnus, Mizar in Ursa Major and M13, just to name a few objects. They are truly stunning and clear right out to the edge of the field. I'm never disappointed by the images, and no wonder: Discovery boasts these mirrors are accurate to 1/10 wave. Aaron Imaoka tried out his TeleVue zoom eyepiece (8 to 24 mm) on my scope, and now, I am really hooked. That must be what happens: you buy the scope, then you just spend, spend, spend to enhance it even more. Eventually, I want to try my hand at piggyback photography, but right now, I'm just content to learn my way round the sky, just like I wanted.



Me and my telescope.

Check out Discovery Telescope's website at: <http://www.discovery-telescopes.com> or call them at: 760-967-6598. The company's founders, Terry Ostahowski and Bill Larsen, are friendly and patient, and they also provide excellent technical support.

JULY'S FEATURED SPEAKER



Francesco Finizio

Aerospace Engineer and Amateur Astronomer

Francesco "Frank" Finizio was born in Assisi, Italy. He graduated from Literature High School, and went on to study and graduated from Naples Polytechnic University with a Masters Degree in Aerospace Engineering. During his varied course of Literature High School and Scientific University Studies, Francesco developed a significant interest in astronomy and astrophysics, which continues to be his passion today. For the past 22 years he has worked for Alenia, the Italian Aerospace Company with significant assignments in the United States and other European Countries. In January 1999, he has officially immigrated to the United States and is looking forward to a new career and to expand his involvement and commitment to the enjoyment and research of Astronomy.

OCA at RTMC



Larry Owings won a Merit Award for a Well-Designed and Executed Telescope Mount. Photo by Dave Kodama.



Saturday Night, "Out Front!"



Jim Hannum's Telescope



Jim Hannum and Dave Radosevich each won Merit Awards for Outstanding Woodworking.



Dave Radosevich's Telescope

Virtual Astronomy

by Dave Kodama

More Solar Observatories

It turns out that last month I missed a couple of solar observatory sites right in our back yard! Here are the web sites for the Mt. Wilson 60-foot and 150-foot Solar Telescopes:

<http://physics1.usc.edu/solar>

60-foot Solar Telescope

<http://www.astro.ucla.edu/~obs/intro.html>

150-foot Solar Telescope

Both sites have many different current views of the sun as well as organized sets of links to other solar observatories. Also very interesting to me were the hand sketches of the sun which are still done daily up at the 150-foot tower. If you visit this site, be sure to check out the interesting background information on what goes into these drawings. Many thanks to Don Nicholson for bringing these sites to my attention.

Astrophoto Topics

I was pleased to hear recently that the second edition of Michael Covington's **Astrophotography for the Amateur** has recently hit the shelves. Although I haven't gotten my hands on this edition yet, it is reportedly an even bigger (doubled size) version of one of the best books out there on astrophotography. In addition to having written the book, Covington is providing aftermarket "support" for his book via his website:

<http://www.mindspring.com/~covington/astro/>

Updates to the book, which are essential in rapidly changing fields such as astrophotography, can be found in his "Updates and Afterthoughts" section of the website. Downloadable programs such as an exposure calculator are also available on his website.

While I'm on the topic of astrophoto books, I should also mention Robert Reeves' website:

<http://www.connecti.com/~rreeves/>

Reeves' book is not out yet (tentatively, **Wide Field Astrophotography**, Willman-Bell), but he has a nice online tutorial which is a sampler of what is to come. In addition, he also has online the results of his HUGE effort to test 45 films for astrophotography. This is a great resource for astrophotographers, who get the rug pulled out from under them by the film manufacturers, who change their films on a regular basis without consulting astrophotographers!

And to balance the abundant "How-To" information provided above, here's some "How-Not-To" information from the University of Michigan:

http://www.astro.lsa.umich.edu/users/kaspar/obs_mishaps/mishaps.html

This is a collection of professional astrophoto goofs which are published with the goal of helping others avoid them. Thanks go to Charlie Oostdyk for bringing these to my attention. Although it was refreshing to see that even the professionals occasionally have bad nights, on a more amateur level, Jim Pennington has his own collection of common amateur astrophotographer goofs on his own web site:

<http://www.geocities.com/CapeCanaveral/Lab/6529/>

To these, I could add my "favorites" – nodding off at the guiding eyepiece, pressing the wrong button to correct tracking and many, many more...

Space Update

Gathered by Don Lynn from NASA and other sources

(To find out more on these topics, or those of past months' columns, through the World Wide Web, send your Web browser to our OCA website: <http://www.chapman.edu/oca/>, and select Space Update Online.)

HST (Hubble Space Telescope) - has measured the Hubble constant, one of the 3 main goals of HST. Since Edwin Hubble realized about 70 years ago that distant galaxies were rushing away from us, astronomers have tried to measure how fast this universal expansion is occurring. The farther the galaxies, the faster they are receding, as a result of the expansion of the universe that has been going on since the Big Bang. So the ratio of expansion speed divided by distance seems to be constant, and that is the Hubble constant, which has eluded precise measurement.

HST accomplished this measurement by imaging almost 800 Cepheid variable stars in 18 galaxies, as far as about 65 million light-years away, some of the farthest such measurements ever made. The intrinsic brightness of Cepheids is known from their periods of pulsation, so comparison with their apparent brightnesses yields their distances. Using this, calibrations were made of other distance methods, which may be applied beyond the distance at which Cepheids can be seen. The result is a Hubble constant of 70 km/sec/megaparsec, plus or minus 10%. Other measurements of the Hubble constant over the last few years have resulted in numbers from lower than 50 to about 100. As one astronomer put it, "We used to disagree by a factor of 2; now we are just as passionate about 10%. ... The factor-of-2 controversy is over."

Running this expansion backwards shows that the Big Bang occurred 14 billion years ago, if gravity has not appreciably slowed the expansion. But using more reasonable guesses of the effects of gravity, the HST astronomers came up with an age of 12 billion years. The age is less certain than the value of the Hubble constant, since the density of matter in the universe, and therefore the slowing effects of gravity, are not well known. The estimates of the ages of the oldest stars were recently revised to about 12 billion years, so the contradiction of star ages versus universe age is apparently disappearing.

Mars Global Surveyor (MGS) - has now completed a fairly complete altitude map of Mars, made from months of taking 90,000 elevation measurements per day with the laser altimeter aboard MGS. In smooth areas, altitudes are accurate to within 6 feet, though measurements are considerably worse in rough areas. We now know the topography of Mars better than many remote places on Earth. The most curious aspect of the topographic map is the striking difference between Mars's low, smooth Northern Hemisphere and the heavily cratered Southern Hemisphere, which sits, on average, about 3 miles higher than the north. The Northern Hemisphere depression is distinctly not circular, and suggests that internal geologic processes shaped it during the earliest stages of Martian evolution.

The massive Hellas impact basin in the Southern Hemisphere is another striking feature of the map. Nearly 6 miles deep and 1300 miles across, the basin is surrounded by a ring of material that rises 1.25 miles above the surroundings, and stretches out to 2500 miles from the basin center. This ring of material was apparently thrown out of Hellas by impact of an asteroid, and has a volume that would cover the U.S. 2 miles deep.

There is a general slope from the Martian South Pole down toward the North Pole. This would cause 3/4 of Mars to drain into the northern lowlands back when the planet had flowing water. The amount of water on Mars can be estimated using the elevation data of the polar caps. While the poles appear very different from each other visually, the elevation profiles are strikingly similar. Based on recent understanding of the North Pole, this suggests that the South Pole has a significant water ice component, in addition to carbon dioxide ice (dry ice). The upper limit on the present amount of water on the Martian surface is roughly 1 million cubic miles, about 50% larger than Greenland's ice, but only about 1/3 of the water that it would take to make the northern lowlands into an ocean in the past.

Galileo (Jupiter mission) - A new study that includes Galileo data shows that the ocean on Jupiter's moon Europa is unlikely to harbor any life form more complex than single-celled organisms, and maybe not even that. The reason is that nearly all forms of energy used by life on Earth are unavailable to the organisms that might live beneath Europa's surface ice layer.

On Earth, chemical energy for life is derived either from sunlight by means of photosynthesis or from the oxygen that is a by-product. This oxygen reaches even the exotic animals inhabiting the super-hot volcanic vents in the deep sea that were discovered about 20 years ago. Even the organisms living under ice sheets on Earth receive energy from outside. Unlike Earth, Europa's is a closed system. The ice layer cannot be penetrated by sunlight and the only available energy in the system comes from within. This energy is very small compared to that used by organisms on Earth. It seems very unlikely that multicellular life could survive, and the lack of energy puts constraints on the likelihood of finding even hardy single-celled organisms. So don't bother taking your fishing pole to Europa.

Galileo, using its dust detector instrument, has found a cloud of microscopic dust grains surrounding Jupiter's large moon Ganymede. Scientists believe this dust cloud is created when interplanetary meteoroids slam into Ganymede's surface. Dust pervades the Solar System, and the best theory explaining the dust is that dust grains are generated when impacts of meteoroids kick up material from larger bodies, such as satellites. In these impacts the meteoroids hit the surface so fast that they evaporate and explode, ejecting debris at such speed that it leaves the satellite's gravitational field. This measurement at Callisto, along with recent ones of dust at Callisto and Europa, strongly support this explanation. The dust concentration at Ganymede is one dust grain per 10,000 cubic yards of empty space, too low to be seen from a distance, but easily detectable with Galileo's dust detector.

Galileo has also measured the temperature of many places on the surface of Europa. The daytime temperatures are as expected, but its nighttime temperatures are puzzling. At night the temperatures vary considerably from place to place, in patterns not related to geology or reflectivity of the surface.

Comet Hale-Bopp - New analysis of observations of Comet Hale-Bopp, made with the infrared spectrometer on the Infrared Telescope at Mauna Kea, Hawaii, is helping scientists to understand where comets formed. There are 2 theories of where formation occurred for the billions (and more) of comets thought to be in the Oort Cloud: 1) comets were formed where the Oort cloud is now (a spherical cloud outside the Solar System planets' orbits), perhaps even before the Sun's early nebular disk condensed into planets, or 2) comets were formed the same time and place as the planets, and moved outward later

Measurements of the percentage of carbon monoxide in Comet Hale-Bopp (12% carbon monoxide, most of the rest is water) agree with the second theory. Specifically, the temperatures present in the area of Jupiter's orbit to Neptune's during the time of formation of those giant planets would result in that percentage of carbon monoxide, but temperatures closer to or farther from the Sun would result in different percentages. It is thought that gravity slingshot events with the gas giant planets could throw the comets outward to form the Oort Cloud somewhat after the comets formed. Scientists warned that this formation-area conclusion applies only to Oort Cloud comets, not necessarily to Kuiper Belt comets. The Kuiper Belt is a doughnut-shaped cloud of comets just outside the outer planets' orbits, but still inside the spherical-shaped Oort Cloud.

Lunar tail - Images taken of our sky during the Leonid meteor shower showed a faint glow of sodium that started at our Moon and extended in the direction away from the Sun for at least 1/2 million miles. Another case of looking for one thing and discovering another. Since the Apollo program, scientists have known that the Moon has an extremely thin atmosphere, continuously being produced by evaporation of surface materials, and continuously being lost by escape and impact back onto the surface. Because sodium reflects sunlight very efficiently, it is easier to photograph than other constituents of the Moon's thin atmosphere. The sodium near the Moon has been measured at nearly a billion times a billion times thinner than Earth's atmosphere. This new discovery shows that some of this thin lunar atmosphere is being pushed into a long tail away from the Moon by the pressure of sunlight. Further measurements showed the tail is always present, but is several times brighter shortly after meteor showers. Apparently, the impacts of meteors on the Moon create more atmosphere.

FUSE (Far Ultraviolet Spectroscopic Explorer) - was at press time set to launch June 23 on a Delta rocket. It will observe nearby planets and the farthest reaches of the universe, and will provide a detailed picture of the immense structure of our own Milky Way galaxy. FUSE's primary focus is the study of hydrogen and deuterium (heavy hydrogen) which were created shortly after the Big Bang.

Defining Right Ascension (R.A.) and Declination (Dec)

Don French, Instructor, OCA Beginner's Class

R.A. and Dec. is a sky coordinate system similar to the longitude and latitude coordinate system on Earth. This celestial grid system enables sky objects to be precisely located on star charts and various specialized lists of objects. Objects in the sky appear to be fixed on the surface of a globe called the Celestial Sphere. The objects are fixed in their location and will appear in their same position year after year, excluding objects in the solar system, which change their position continuously. The rate of their position change depends on their distance from the Sun.

Earth is at the center of the celestial globe and rotates on its axis once every 24 hours, relative to the Sun. The Earth's axis is extended to the Celestial Sphere. The extension of Earth's North Pole locates the Celestial North Pole (CNP). Likewise, the extension of the South Pole locates the Celestial South Pole (CSP). Earth has a grid system that enables any point on the surface to be defined in terms of latitude and longitude. The elements of that system are defined as follows:

a) **Equator**—the circle on the Earth's surface that is midway between the north and south poles. Passing a plane through Earth halfway between the poles and perpendicular to the Earth's axis creates it.

b) **Latitude**—the angle created by a line from the center of Earth to the equator and a line from the center of Earth to a point above or below the equator. When this second line is also on the equator, it creates an angle of 0 degrees. When the second line points to the North Pole, it creates an angle of +90 degrees. Similarly, pointing to the South Pole creates an angle of -90 degrees. If the two lines are rotated completely around the Earth's sphere, they create circles parallel to the equator. These are the parallel lines or circles of latitude.

c) **Longitude**—the circle created by a plane passing through Earth at both poles. The circle is called a meridian. The circle that passes through Greenwich Observatory is called the prime, zero, or reference meridian. These circles also intersect the equator and latitude circles at 90 degrees. The circle that passes through an observer's position is the observer's meridian. Longitude circles are measured from the prime meridian east or west along the equator and varies from 0 degrees to 180 degrees Earth Coordinate System

Any position on Earth is defined as being East or West Longitude and North or South Latitude. Both values are measured in arc degrees, minutes, and seconds.

Earth rotates 360 degrees in a day or 24 hours counter-clockwise as viewed from above the North Pole. A position on Earth has different time values depending on its longitudinal position. Each 15 degrees west of the prime meridian is one hour earlier than Greenwich time and one hour later for each 15 degrees east. Thus, the actual time of a location on Earth is a function of the longitude value. Of course, actual times have been standardized into one-hour time zones.

Celestial Sphere Coordinate System

We have already defined the CNP and CSP. The Earth equator is reflected onto the Celestial Sphere as the Celestial Equator. The Earth latitude circles are reflected onto the Celestial Sphere as circles of Declination. They are defined as 0 to +90 degrees for north of the equator and 0 to -90 degrees for south. The Earth longitude lines are reflected onto the Celestial Sphere as hour lines. They are defined as 0 hours through 23 hours. The 0 hours line goes through Vernal Equinox on the Celestial Sphere.

Where is the Vernal Equinox on the Celestial Sphere?

Until now we have covered Earth and its coordinate system and the Celestial Sphere and its coordinate system. We must now bring in the Sun and the Earth's position relative to the Sun. Earth travels around the Sun on a plane called the Ecliptic. The Earth's axis is tilted $23^{1/2}$ degrees to the ecliptic. The plane of the Ecliptic extends to the Celestial Sphere and creates a circle on the sphere. This ecliptic circle crosses the Celestial Equator at an angle of $23^{1/2}$ degrees. The celestial Vernal Equinox is the point where the Celestial Equator crosses the Celestial Ecliptic while it is rising or ascending and going from left to right. Position on the Celestial Equator is measured in hours, minutes, and seconds of Right Ascension.

OCA at the Orange County Fair

Volunteers Needed for Great Outreach Opportunity!! by Jim Benet

The Orange County Astronomers will be setting up telescopes for public viewing at the Orange County Fair on Friday and Saturday nights, July 16 and 17. Volunteers should arrive at the Fair at 7:00 PM to set up their scopes. Public viewing will start at 8:00 PM. Due to scheduling conflicts with other OCA activities that weekend, additional volunteers will be needed to work the Fair.

The Orange County Fair is the club's largest and most important outreach activity. Several thousand people are expected to visit the OCA site at the Fair this year. Thus, the Fair represents an excellent opportunity to recruit additional OCA members. We have a good location this year next to one of the two main entrances. Please contact Jim Benet (714 693-1639) if you can attend at least one of these nights. This should be done in advance to obtain a parking pass in the exhibitor's parking area.

To get to Orange County Fair take the 55 Freeway to Fair Drive. Head west on Fair Drive to Fairview. Head north on Fairview to Arlington. Turn right on Arlington and go to the Gate 4 entrance. Park in the exhibitors parking area. You will need to get a parking pass from Jim Benet. The OCA site is on the right as you come down the main entrance pathway from Gate 4. An equipment scooter and driver will be available to help transport your equipment from your car to the OCA site (about 200 yards). You can contact Jim during fair hours by calling his cell phone number (714 931-1639).



A great panned shot of the Telescope Field at RTMC, taken by Dave Kodama.

WAA Board Meeting Notes

by **Tim Hogle**

The Western Amateur Astronomers (WAA) is an umbrella organization of astronomy clubs, primarily in the western US, operating since about 1950. OCA has been a long time supporting member club. WAA's primary function has traditionally been to promote communication between amateur astronomical societies and to hold a well respected annual astronomy conference. The WAA is well known for annually awarding the prestigious G. Bruce Blair Medal to an individual who has made outstanding contributions to amateur astronomy.

This year, the Blair medal recipient was presented to Ms. Denni Frerichs, a co-founder, longtime active member and frequent officer of the Astronomical Association of Northern California, Fremont Peak Observatory Association, Chabot Telescope Makers Workshop, Group-70 Large Amateur Telescope Project, and others. Her husband, Kevin Medlock, is also a Blair recipient (1992). She accepted the award in May at RTMC.

WAA is continuing to look in new directions for worthwhile activities in the area of its charter. The item of primary focus at the present time is consideration of an offer from the Astronomical League, another and larger umbrella organization with divisions nationwide, to combine with the AL Western Region organization (WRAL). In past years this offer has been not considered viable by WAA because of the "East Coast" orientation of the AL, the dollar cost of joining, and because WAA was doing quite nicely without being tied into a higher level organization. While the monetary cost is still very real, AL is now making a sincere effort at becoming a nationally oriented astronomy organization.

This merger does have implications for the OCA. If WAA merges with the WRAL, the OCA will be faced with a decision about whether or not to join the combined organization. There is a cost (\$3 per dues-paying member or member unit) versus benefit (numerous) tradeoff to that decision, about which you may expect to hear more in the coming months if the OCA board feels this may be of sufficient benefit to the membership. I feel that a club member consensus is warranted, although a mechanism for member discussion/voting has not been discussed by the board as of yet. The WAA-WRAL merger decision is at least 11 months away and is anything but a foregone conclusion, as much work has to be done on specifics of constitutional issues and agreements. But the OCA's preference on AL membership is certain to influence our vote on the merger. I am happy to individually discuss the issues involved if desired.

In another area worthy of note, the WAA has just recently established a World Wide Web site. The URL is <http://www.waa.av.org>. It is a work in progress, and a learning experience for the webmasters, Earl Wilson and Richard Rynne of China Lake Astronomical Society. Check it out.

ASTROLLANEOUS

The 1999 Astronomical League will be holding its 52nd annual convention, ASTROCON '99, "A Thousand Years of Stars & Space", at Eastern Washington University in Cheney, Washington, just outside Spokane, July 13th-17th 1999. This will be the first time in 10 years that the convention has been held in the Northwest and 8 years since being held on the West Coast! The long list of speakers includes Dr. F. Story Musgrave, Astronaut and HST primary repair mission specialist, Dr. Donald Parker, President of ALPO (Association of Lunar & Planetary Observers). Besides the speakers, there will also be many workshops and activities. For more info, check out the website: <http://www.SpokaneAstronomical.org/astrocon99>.

ASTRONOMER

NEWSLETTER OF THE
ORANGE COUNTY ASTRONOMERS
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