Saguaro Astronomy Club

Metro Phoenix, Arizona

SACNEWS

November, 1990 — Issue #166

Novice Group Meeting

by Steve Coe

The Novice Group will meet for a practical hands-on session at the November Star Party on Saturday, Nov. 10. The directions to Buckeye Park are in the newsletter. Several experienced observers will be on hand to help you with scope set up, alignment and collimation. Once things get dark there will be a beginning lesson on star hopping to help you find your way around the sky.

Please try and set up at the eastern-most end of the SAC observing area in Buckeye Park. The road does a small loop at the end. We will conduct the help session from there.

The Novice Group would appreciate other observers not planning to be part of this effort to please avoid the eastern part of the observing area.

It would be best if everyone who plans to participate in the session would show up by 5:00 PM. That will give us some time during daylight hours to help anyone who is interested. If you have not been at the Buckeye Site before, it's about one hour from Phoenix, so leave early enough to show up long before it get dark.

Steve Coe may be reached for questions at 939–3787.

Comet Comments

by Don Machholz

Three new faint comets have been discovered recently, but they are not expected to get very bright. Comet Levy is in the solar glare; we'll see it again in our morning December sky. Periodic Comet Wild 2, which will be closest the sun at 1.58 AU on December 16, emerges into our morning sky. Also there we find Comet Tsuchiya-Kiuchi, which is magnitude eight.

Comet Mueller (1990j): Jean Mueller, working on the Second Palomar Sky Survey, discovered this comet on photos taken Sept. 15. An early orbit suggests that it will be closest the sun next February at 1.6 AU, when it might reach magnitude 15.

Comet Holt-Olmstead (1990k): Henry E. Holt and C. Michelle Olmstead report their discovery of this comet on Sept. 14. They were using the 18" Schmidt at Palomar. The comet was closest to the sun in late September at 2.0 AU and has an orbital period of 6.2 years. It will not get brighter than magnitude 17.

Comet Mueller (1990L): Jean Mueller discovered this comet from Palomar. It is magnitude 18, but no orbit is yet computed.

Periodic		**Comet**	**Wild**			**2**
Date	RA-1950-Dec		RA-2000-Dec		Elong	Sky Mag
10–26	11h23.1m	+04°27'	11h27.9m	+04°11'	42°	M 11.6
10–31	11h36.7m	+03°08'	11h39.3m	+02°51'	43°	M 11.5
11–05	11h50.4m	+01°47'	11h53.0m	+01°30'	45°	M 11.4
11–10	12h04.2m	+00°26'	12h06.8m	+00°09'	46°	M 11.3
11–15	12h18.1m	−00°56'	12h20.6m	−01°13'	47°	M 11.2
11–20	02h32.0m	−02°17'	12h34.5m	−02°34'	49°	M 11.1
11–25	02h45.9m	−03°38'	12h48.5m	−03°54'	50°	M 11.1
11–30	12h59.9m	−04°57'	13h02.5m	−05°13'	51°	M 11.0
12–05	13h13.9m	−06°15'	13h16.5m	−06°18'	53°	M 11.0
12–10	13h28.0m	−07°30'	13h30.6m	−07°46'	54°	M 10.9

Comet		**Tsuchiya-Kiuchi**			**(1990i)**
Date	RA-1950-Dec		RA-2000-Dec		Elong	Sky Mag
10–26	10h39.8m	−06°29'	10h42.3m	−06°45'	49°	M 7.7
10–31	10h31.4m	−09°25'	10h33.9m	−09°40'	56°	M 7.7
11–05	10h21.0m	−12°44'	10h23.5m	−12°59'	62°	M 7.7
11–10	10h08.1m	−16°31'	10h10.5m	−16°45'	69°	M 7.6
11–15	09h51.5m	−20°48'	09h53.9m	−21°02'	76°	M 7.6
11–20	09h30.1m	−25°37'	09h32.3m	−25°50'	84°	M 7.6
11–25	09h02.9m	−30°47'	09h04.1m	−30°59'	91°	M 7.6
11–30	08h25.4m	−35°56'	08h27.3m	−36°05'	99°	M 7.6
12–05	07h39.6m	−40°22'	07h41.3m	−40°29'	105°	M 7.7
12–10	06h46.5m	−43°19'	06h48.0m	−43°22'	110°	M 7.9

Bits and Pieces

November's Speaker

Steve Coe will be the speaker for the November meeting and will be speaking on "Serendipity in Astronomy."

Christmas Party Planned, but Date to be Determined

We are still planning to have a Christmas Party as we usually do in lieu of a December meeting. However, the originally planned December 8th date may not be the best time. We will discuss this in more detail at the November meeting.

Minutes of the October Meeting

President Pete Burggraaf brought the meeting to order at 7:30pm and welcomed members and guests. Everyone was reminded of upcoming events, particularly the Public Star Party scheduled for Thunderbird Park. Nominations were opened for 1991 officers; all positions are open to any members. Incumbents are running for vice president, secretary and properties director. No candidates are yet slated for president or treasurer. After a lively discussion on the pros and cons of raising the dues to $20.00 per year ($10.00 for newsletter only), the motion to do such passed with only three negative votes. A. J. Crayon presented a Messier award to Pete Burggraaf for observing the 110 objects in this list. There were minor announcements by Dan Ward (dust on Mars) and Steve Coe (old magazines for sale). Following the break, Pierre Schwaar showed more of his great videos of the moon and planets. —*Pete Burggraaf, SAC President*

1990 SAC Meetings	**1990 SAC Star Parties**
November 2	November 10
December ? Party	December 15
— **1991** —	— **1991** —
January 4	January 12
February 1	February 9
March 1	March 9

Deep Sky Meeting

The Deep Sky meeting will take place on Thursday, November 8 at 7pm. See the directions that follow.

Directions to SAC Events

SAC General Meetings 7:30 PM at Grand Canyon University, Fleming Building, Room 103 — 1 mile west of Interstate 17 on Camelback Rd., north on 33rd Ave., second building on the right.

SAC Star Parties at Buckeye Hills Recreation Area — Interstate 10 west to Exit 112 (30 miles west of Interstate 17), then south for 10.5 miles, right at entrance to recreation area, one-half mile, on the right. No water and only pit toilets. Please arrive before sunset; allow one hour from central Phoenix.

SAC Deep Sky Subgroup Meeting at John & Tom McGrath's, 11239 N. 75th St., Scottsdale, 998–4661 — Scottsdale Rd. north, Cholla St. east to 75th St., southeast corner.

Observer's Handbook Subscribers

When the price for the handbook was published, it was assumed to be the same as last year's price ($8). The actual price for the Handbook is $9.50. Please be prepared to pay $1.50 extra when you pick it up in December (we hope).

Adventures in Wide Field Astrophotography

by Chris Schur

Part 5

In this fifth and final article on skyshooting widefield systems, I will discuss some of the mechanical problems which can cause difficulties with your efforts, and the question of guiding tolerances. I will also cover the best filters for this type of work and last, examining the final results to get the most out of your adventures in this type of astrophotography.

Some mechanical problems

Despite careful polar alignment and accurate tracking, the flexing of a poorly designed camera mount or improperly balanced tube assembly can ruin a potentially fine shot. Most astrophotographers tend to overlook balance as a cause for poor results. It has been demonstrated that most mountings will track better if the balance is shifted on the counterweighting such that the scope slowly leans eastward, when the RA clamp is loosened. In other words, it is much better to have the gear pull the telescope than the telescope pulling forward on the gear. Tracking can be up to ten times better one way than the other, so be certain to check the balance just before each shot, or at least when moving to a new part of the sky.

Flexure can ruin a potentially well guided shot too. All too often poor guiding is blamed when in reality the tracking was good but the camera flexed a bit relative to the guiding telescope. To eliminate this, as discussed earlier, a sturdy mount must be devised to insure a rigid connection to the back of the telescope tube. A wooden saddle may have to be installed on the tube itself with straps if the tube bends from the weight of the camera. Cardboard tubes or those made from fiberglass should be suspect.

Guiding tolerances

Even if you are guiding the best you can and have eliminated both flexure and mechanical problems, you may wish to know just how accurate you will need to track to obtain best results. By using the simple rule of thumb

1990 Death Valley Star Party

Dec 26th through Jan 1st
Furnace Creek Visitor Center

John Dobson of the San Francisco Sidewalk Astronomers will be hosting the 20th annual Death Valley Star Party. John will be giving interpretive programs on Astronomy and setting up telescopes for public viewing.

During the past five years we have seen a rise in public participation and a decline in telescopes. With your help we can once again provide enough telescopes to meet public demand.

Don't miss this exciting opportunity to meet John Dobson and to explore magnificent Death Valley National Monument.

Interested persons should contact Tom Mathews at (714) 659–2560. See you at the Furnace Creek Campground and Visitor Center!

that a 50mm lens with today's fine grained films can just resolve a tracking error of about an arcminute (60 seconds), you can scale your tracking tolerance accordingly. For example, a 135mm lens, which is 2.7 times longer focus than the 50mm lens, will resolve an error 2.7 times smaller, or 60 seconds/2.7 = 22 seconds. Your tracking must be such that the guide star is kept within an imaginary boundary of this size. Take a look at several double stars of known separation to determine what your tolerance will look like in the guiding eyepiece. For the 35mm lens in this example, the double 61 Ophiuchi would fill the bill nicely.

Filters for wide field photography

For use in either combatting light pollution or improving the contrast in emission nebula photography, filters are becoming an indispensable part of the skyshooter's accessories. There are basically two filters that are useful for wide field work. The first type are deep red filters such as the Wratten 25 or the Lumicon H-Alpha Pass filter. These will not only cut natural or artificial sky fog substantially, but will provide a big increase of the contrast in recording the highly sought after and dim emission nebulosities. Objects of this class include the North America Nebula and the California Nebula. Of course, we must use B&W film with these filters. The only one that has the red sensitivity to work well is hypered 2415. For color shots, which is what most individuals will be using, there is a filter that will drastically cut sky fog at light polluted sites and at dark sites bring out the emission nebula at a much higher contrast and detail. This special filter is available at Lumicon as the Deep Sky Filter and has proven to be the best photographic filter on the market. I do not recommend this filter for ultra wide angle lenses because of the restricted acceptance angle of the multilayer construction. But for 50mm or longer focal lengths it works very well. Exposures can be lengthened about 3 times the sky fog limit without the filter and not sacrifice any details in star clouds or non-emission objects in the field.

Studying your results

With some care and patience you could end up with a beautiful collection of constellation slides or prints along with close ups of favorite individual objects and regions. A this point the real pleasure begins — the study of the results. The best way is to get out the Sky Atlas 2000 or Skalnate Pleso charts and try to identify as many deep sky objects as possible on your shots. You will discover many additional objects not plotted on the charts. This will be especially true in areas near the Milky Way and portions of the sky shot through nebular filters. It should be strongly emphasized that the plates you obtain can be used as tools for observing. Since the star charts lack the fine details that many of your exposures will reveal, you will be able to go back out to the telescope and examine many new deep sky wonders that you may not have been previously aware.

Conclusion

There is a facet of astrophotography for everyone. Wide field skyshooting allows us to see much more of the universe than is possible by vision alone. The rewards of capturing a small portion of the Galaxy permanently on film for everyone to enjoy is something anyone can be proud of.

Such-A-Deal

SUCH-A-DEAL is a place to advertise equipment, supplies, and services related to amateur astronomy. This is a free service for SAC members and friends. SAC is not responsible for the quality of advertised items or services.

Telescope—Astrophysics 4-inch $f/8$ Starfire refractor; alt-azimuth mount, tripod; 32mm Orion 2-inch eyepiece; Telrad finder; Astrophysics carrying case; 2-inch star diagonal. $1,275. Tom Good, 954–8963.

Math Coprocessor—If you have an 80386/33-based computer and need a 80387/33 coprocessor, I'm willing to trade for something "astronomical" that I can use. Pete Burggraaf 995–4273 (w) or 995-1964 (h).