

Saguaro Astronomy Club

Metro Phoenix, Arizona

SACNEWS



September, 1990 — Issue #164

Comet Comments by Don Machholz

One comet has been discovered recently. Meanwhile, Comet Levy is at naked-eye visibility and up nearly the whole night. Periodic Comets Encke and Honda-Mrkos-Pajdusakova, both low in our morning sky, are joined by Comet Skorichenko-George. This comet was discovered in the evening sky last December, it is now receding from the sun (presently this distance is 2.4 AU) while it remains at 3.2 AU from the earth.

Comet	Levy		(1990c)		
Date	RA-1950-Dec	RA-2000-Dec	Elong	Sky	Mag
08-22	20h50.4m +05°35'	20h52.8m +05°46'	155°	E	4.4
08-27	19h43.6m -07°13'	19h46.3m -07°06'	141°	E	4.2
09-01	18h37.8m -18°55'	18h40.7m -18°53'	121°	E	4.3
09-06	17h42.9m -26°54'	17h46.1m -26°55'	103°	E	4.5
09-11	17h01.3m -31°40'	17h04.5m -31°44'	90°	E	4.7
09-16	16h30.7m -34°31'	16h34.0m -34°37'	79°	E	4.9
09-21	16h08.0m -36°19'	16h11.3m -36°27'	71°	E	5.1
09-26	15h50.6m -37°31'	15h53.9m -37°40'	63°	E	5.3
10-01	15h36.7m -38°23'	15h40.0m -38°33'	56°	E	5.4
10-06	15h25.4m -39°01'	15h28.6m -39°11'	50°	E	5.4

Periodic Comet	Honda-Mrkos-Pajdusakova		(1990f)		
Date	RA-1950-Dec	RA-2000-Dec	Elong	Sky	Mag
08-22	07h20.7m +16°05'	07h23.6m +16°00'	39°	M	8.4
08-27	07h51.9m +16°13'	07h54.7m +16°05'	36°	M	8.4
09-01	08h18.9m +16°01'	08h21.7m +15°51'	35°	M	8.4
09-06	08h43.8m +15°32'	08h46.6m +15°21'	34°	M	8.4
09-11	09h07.8m +14°46'	09h10.5m +14°34'	33°	M	8.6
09-16	09h31.1m +13°44'	09h33.8m +13°31'	32°	M	8.9
09-21	09h53.8m +12°29'	09h56.4m +12°15'	31°	M	9.3
09-26	10h15.4m +11°05'	10h18.1m +10°50'	30°	M	9.7
10-01	10h35.8m +09°37'	10h38.2m +09°22'	30°	M	10.3
10-06	10h54.6m +08°07'	10h57.2m +07°51'	30°	M	10.8

Comet Tsuchiya-Kiuchi (1990i): Kiyoshi Tsuchiya photographed this comet on July 13, it was then visually found by Tsuruhiko Kiuchi on July 16. Kiuchi was using the same 25x150 binoculars he had used to find his first comet (1990b) earlier this year. Independent discoveries were made on July 16 by both M. Zanotta of Italy

(his second independent find in the past year) and by X-m Zhou of China. Incidentally, I had swept to within two degrees of it on July 13 before ceasing due to moonlight.

At discovery the comet was in the evening sky near galaxy NGC 4565. Its retrograde orbit takes it to perihelion in late Sept. at 1.1 AU. It is now nearing the sun in the evening sky; it will emerge into our morning sky in Oct. at magnitude eight.

Periodic Comet Skorichenko-George (1989e ₁)					
Date	RA-1950-Dec		RA-2000-Dec		Elong Sky Mag
09-11	08h37.2m	-04°20'	08h39.7m	-04°31'	40° M 11.1
09-16	08h42.5m	-06°01'	08h45.0m	-06°12'	43° M 11.1
09-21	08h47.5m	-07°42'	08h49.9m	-07°53'	46° M 11.2
09-26	08h52.2m	-09°24'	08h54.6m	-09°36'	49° M 11.3
10-01	08h56.5m	-11°07'	08h58.9m	-11°19'	53° M 11.4
10-06	09h00.6m	-12°50'	09h02.9m	-13°02'	56° M 11.4

Periodic Comet Encke					
Date	RA-1950-Dec		RA-2000-Dec		Elong Sky Mag
08-22	04h44.0m	+33°10'	04h47.2m	+33°16'	75° M 10.7
08-27	05h08.2m	+34°18'	05h11.5m	+34°21'	74° M 10.4
09-01	05h36.2m	+35°14'	05h39.5m	+35°15'	73° M 10.2
09-06	06h08.7m	+35°49'	06h12.0m	+35°49'	71° M 10.0
09-11	06h46.1m	+35°51'	06h49.4m	+35°47'	69° M 9.7
09-16	07h28.3m	+35°00'	07h31.6m	+34°54'	65° M 9.5
09-21	08h14.2m	+33°00'	08h17.3m	+32°51'	60° M 9.3
10-26	09h01.5m	+29°40'	09h04.6m	+29°28'	54° M 9.1
10-01	09h47.9m	+25°02'	09h50.8m	+24°48'	47° M 9.0
10-06	10h31.4m	+19°26'	10h34.2m	+19°11'	41° M 8.9

Bits and Pieces Minutes of the July Meeting

Steve Coe opened the meeting as acting officer at 7:30 PM. Virginia Campbell followed with announcements of upcoming events (see attached calendar). A. J. Crayon then outlined the Deep Sky Meeting program. Pete Manly added an update to the continuing Mt. Graham saga. Cathe Becker then presented the Treasurer's report. For the Show-and-Tell portion of the meeting Tom Polakis showed his slides of storms and stars.

After the break Bill Train?? showed his first photos at camera and tripod astrophotos. Pete Manly announced

SAC contributors to 2 Vulpecula occultation report in *The Astronomical Journal*. The main speakers were club members Chris and Dawn Schur, Rick Rotramel and Tom Polakis. Their talk and slide show covered their recent trip to Australia. —*Phil Dahl, SAC Secretary*

1990 SAC Meetings
September 7
October 5
November 2
December 8

1990 SAC Star Parties
September 15
October 13
November 10
December 15

Deep Sky Meeting

The Deep Sky meeting will take place at the McGrath's on Thursday, September 13 at 7pm.

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.

Adventures in Wide Field Astrophotography

by Chris Schur

Part 3

In this article I will discuss the mechanical aspects of piggybacking work along with the proper method of polar alignment and guiding.

Steps to do Wide Field Photography

The simple arrangement of an ordinary camera mounted piggyback style on an average equatorially mounted telescope allow many amateurs to attempt sky-shooting for the very first time. The most basic requirements are to have a 35mm camera with a suitable lens and a tracking platform. This can be a barn door type mount or better, an equatorially mounted telescope with a camera bracket affixed to it's tube.

After the mounting is well polar aligned and tracking on a suitably bright guide star that is contained within the camera's field of view, the shutter is opened say for ten or fifteen minutes. The guidestar is then kept reasonably

centered in the field during the exposure. The shutter is then closed, film advanced, and in a short time a collection of constellation shots or overlapping Milky Way fields can be obtained. To get the most from every shot, lets back up a bit and consider each step carefully to make the final result the best it can be.

Let's start with that polar alignment. Even a degree off the true pole will ruin an exposure taken in the higher declinations due to a phenomenon called "field rotation." This causes the entire photographic field to rotate around the guide star. In a wide 25mm or 50mm lens shot, this can obliterate the fine details in the outer half of the field!

To prevent this, a polar alignment within a quarter of a degree is desirable. Over the years, there have been many complex methods to get the axis of the telescope aimed at the exact pole. However, I use a method that has proven effective and takes only about five minutes or less. Unlike the classic method of waiting around for hours watching the guide star drift to and fro to determine whether you are East or North of the true pole, there is a method which is much simpler. You can aim the RA shaft directly at the pole with an offset bore sight.

To accomplish this you will need a 6x30 finder, and a "V" block to rest on the polar shaft of the mounting. The finder rests in the other side of the "V" block, and the whole mount is aimed right at the pole directly using the chart in **Burnhams Celestial Handbook** or **Uranometria 2000** for reference. Depending on your patience, you can home right in on the North or South celestial pole in a comparatively short time.

Another consideration is the mounting of the camera on the back of your scope. Care should be given to the rigidity of the attachment. A simple ball joint mount available in many well stacked camera stores will work well for 35mm and 50mm lenses, but for anything longer in focal length some additional support is an essential. Even a short wooden brace holding the front of the lens will work well, and you should be able to move the entire telescope around by grabbing a hold of the camera lens itself. There should be no bending, vibration or slow shifting between the two optical systems.

Also critical to the success of an astronomical photograph, is how carefully you guide. This can be made overly complex, but it shouldn't be. Atypical arrangement is a 12mm red LED illuminated crosshair eyepiece, and a 2X barlow for longer lenses. For 35mm and 50mm lenses, 50X and 100X magnification will be required with today's finer grained films. For 135mm-200mm, 100X-150X is suggested, and for up to 400mm long lenses, you may need to go up to 200X for best results.

Piggyback wide field astrophotography is one of the simplest yet one of the most rewarding aspects of the hobby. Whether you are well seasoned in the field, or a complete novice, you will always find yourself poring over the prints or slides looking for ever fainter details you may have missed the first time through.

The Criterion RV-9 Dynascope by Tom Polakis

Editors Note: The August issue of SACNEWS was mistakenly labeled the July issue.

The August '90 SAC newsletter contained an excellent bargain in the "Such-a-Deal" section. A Criterion RV-9 Dynascope was being sold for \$150. This is a complete 6" Newtonian telescope with finder, equatorial mount, clock drive, etc. for the same price that a good eyepiece demands these days. After much thought and a healthy dose of rationalizing, I shelled out the money and took it home.

In many bull sessions, I've learned that this is the one low-priced commercial telescope that is generally held in pretty good favor by veteran amateurs. The RV-6 is a 6" $f/8$ with a 1.25" focuser, 6x30 finder, German equatorial mount, worm gear clock drive, and a pier tripod. It was manufactured for many years up until 1984, when its price peaked out at just under \$400. I remembered it as my first "real" scope in 1978 and 1979 (excluding several department store specials), which was used to view much of the Messier catalog before being sold to buy a C-8 drive corrector. Before purchasing this scope, I tried to remember images from these early days in the hobby when I didn't know how to evaluate mounts or optics. Fortunately, after a recent thorough evaluation, the RV-6 has proven to be a real performer.

My first dark sky test occurred recently on a trip to the Grand Canyon. I managed to convince a friend that it would fit in his mid-size car along with hiking and camping gear for two people. The tube's 50" length is the limiting factor but it fit easily across the back seat. The mount collapses very well after that point, taking up little space. We set up at one of the state's best accessible dark sky sites, about 15 miles south of the South Rim in the Kaibab National Forest, among low juniper trees. From this site the Gegenschein was easily visible, rising in front of Capricornus, when it was 15 degrees above the horizon!

The first target was the globular cluster, M13. At 174x, the core was very sharply resolved, showing hundreds of tiny points. The edge of the cluster failed to reveal its fainter members to the 6" scope as it would to a typical SAC 13" or 16" scope. The easy double star test was performed on Epsilon Lyrae, the double-double. The split of both pairs was easy a 135x. The stars showed very clean Airy disks and the seeing effects were small in this smaller aperture scope. The RV-6 also did well on the diffuse object test as it showed the Veil Nebula very clearly unfiltered. Comet Levy, 1990c, an easy naked-eye object, showed an interesting ray tail with an almost-opposing anti-tail, 150 degrees in position angle away from the main tail. During morning twilight, I viewed the planet Jupiter emerging from an occultation by the Moon. The contrast

provided by this scope was again excellent and the drive followed the event flawlessly. The mount was adequate, although it was not of Pierre Schwaar's Bigfoot mount quality (but what else is?). Damping time was about 4 seconds at high powers.

As the owner of two larger scopes, I received mostly negative response upon telling people about purchasing a 6" scope. But it has now proven itself to be a good, rugged, driven scope for just these types of trips. So if you see an RV-6 advertised for sale in the newsletter in the future, check it out. You can bet it won't be mine.

Public Astronomy Session

There will be a public astronomy session Oct. 20 at Thunderbird Regional Park. More details next month.

Group Subscribers: Please Note

For those of you who have subscriptions through the club: In order to make your life, my life, and the life of the next club Treasurer (THIS COULD BE YOU!) easier, please make every attempt to renew your group subscriptions to *Astronomy*, *Deep Sky*, *Odyssey*, and *Telescope Making* at the **September** meeting. I make no assurance regarding the publisher's handling of late renewals. ("Late" means **any** time after September 30, 1990.) Last year I tried to be nice and extend the deadline and it caused me — and others — mucho headaches.

Kalmbach Publishing asks me to tell you that even though you are on the club's group plan, you will receive renewal notices. Please disregard the reminders if you are renewing through the club.

If you are considering joining our group subscription, here are the facts: 1) The subscription is for the **calendar** year. This means subscriptions usually expire with the January issue. You may get lucky and have your subscription expire in a different month, but don't count on it. 2) Late subscriptions take 2 to 3 months to process. You may "lose" an issue after your old subscription expires if you don't renew in time. Which leads us to . . . 3) If you have a problem with your subscription, you will have to handle it yourself. This is the price you pay for the 67% discount the group rate gets you — just because the Treasurer sent the check for you does not mean he/she took on handling your subscription woes. This is a volunteer job. Speaking of which . . .

1991 is just around the corner and SAC will be needing a new Treasurer. Club rules do not allow me to do it again next year. Anyone interested should let Pete Burggraaf, the club president, know. It's not a hard job, but it is a necessary one.

Also, if you want to be assured of a copy of *The Observer's Handbook* for 1991, please order it by the October 5 meeting. Since they took 90 days to arrive last year, I am sending them off ASAP in hopes of having them by New Year's. — *Cathe Becker, SAC Treasurer*

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—Meade Model 2120, 10" *f*/10 Schmidt-Cassegrain; 3 years old; mint condition; assorted filters; 7mm, 15.5mm & 20mm eyepieces; 2X teleneegative; AC & DC power cords; Minolta T-ring; piggyback bracket; diagonal prism; observer's chair. Price negotiable. Greg Kar, 993-9339.