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1976

Jan 1-2

Padilla + Sorensen. Clear, cold + no wind.
Temp 30° - 12° F. Color photography at prime focus
+ 35mm piggy-back using Fujichrome film. Worked
all night braving the cold! Results worth the effort.

Jan 10-11

Padilla, Sorensen + Marcaris. Clear weather 38° - 34°
no wind. Visual observing while first quarter
moon was up. Did astrophotography at prime focus
of 18" after moon set.

Jan. 13

Royce + Padilla - Beautiful winter day
 60° F - no wind. Stuffed dome leveling
opening with rope to prevent snow drifting
inside. Shimmered SW corner to
halt sag.

Photographed Comet Bradfield 75p at
about 8.5 mag. Shows no tail, but
exposure short because of gibbous moon.
Did polar photos to determine how far
polar axis is off. $36'$ west of pole.
revised figure $\approx 20'$ south of pole + $5'$ west

Jan 20

Royce + Padilla. Photographed R Coe
field - astrophot. only. Also Orion Nebula.
Water-sensitive D plates. Clear - no
wind - good seeing. 40° F.

Comet Bradfield. 1 min. exp. diffuse object. no tail

Jan 23-24

Kovalev, Royce, Padilla, Sorensen.
Worked all night on auto-guider.
Clear night, moderate S.W. wind 36° F.
Surge problems on guider + field alignment
off to one direction. Sensor, chopper, amplifier
all OK.

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Jan 27 Royer + Padilla. Mapped out dome.
 Did focus tests on astrograph + pinofocus
 camera after poor results on last week's run.
 Appears focus plate out by .030".
 Photographed Orion nebula in color
 and photovisual plates. Some cirrus.
 No wind 40°F.

JAN 31 - FEB 1 Tailorcan & Town - no observing due to clouds, etc.
 Temp approx 36°F. Rotated dome to N.E. Parking
 Station as per instructions of C.F.F. All equipment
 is in good working order.

Feb. 3 Royer + Trigon. Increasing clouds.
 No observing. Fixed R.A. fast
 motion - Please use it - Take
 paddle - small one - up on platform!
 S.W. wind - moderate 40°F.

Feb. 23 Royer + Padilla. Parked at 4N21 gate at 4:45
 - 24 P.M. Road plowed to JPL back gate.
 Put on cross-country skis. Followed road to
 snot gulch turn off - we kept on south
 ridge to Observatory. High wind - some
 snow. Arrived obs. 6:15 P.M. Weather
 clearing but too much wind to do photography.
 Up at 4:00 A.M. - Clear - no wind
 28°F. Too much moon for photography.
 Observed faint new variables in Lepus.
 Skied out at 8:30 A.M. WOW!
 Some snow blew in during night under
 rubber flaps - wind just lifts them. But
 not much.

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Mar 27-28

Padilla & Marcario. Hiked $\frac{3}{4}$ mile up to observatory from road which is unplowed. Dome in good condition. Set up for prime focus photography. Did 1 hr. exposures of NGC 4565, M101 and NGC 5128 on GAF 500 color. Photographed Comet West on GAF 500 color, 5 x 10 minute exp, IIa-D 45 plates unfiltered, prime focus 5 x 10 minute exp, Tri-X 4x5 sheet film 1 x 2 minute exp. Clear, seeing fair. Temp 50°-28°.

April

26-27

Royer + Padilla. Cleared road of rocks and snow to drive in.

Did visual estimates in evening - seeing too poor for photography.

Photographed Delphinus with astograph in A.M. - seeing improved. Photographed Comet West. Polaroid monitor photo shows $\frac{3}{4}^\circ$ tail at P.A. 270° . Mag. between 7 and 8. Ran series of photos to show 3 nuclei and their P.A.'s

Mounted capacitors on slow motion relays in preparation for auto-guider.

Prepared mounting brackets to correct polar-axis alignment.

Clear weather. Intermittent light wind 32° night Temp.

MAY

APR 7-8

Bilodeau & Grants: 10:00 P.M. - 12:15 P.M. PST.

Checked out equipment. All in O.K. Took guide scope off telescopes and rebalanced scope. Tried to do some viewing but too many clouds. Temp 40°, no wind, 1st Qtr. moon.

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- 4/14/89 Bilodran, Jones. Conducted field trip of astronomy students from Los Angeles Mission College. ~~Obs~~ opened Obsy 6:00 pm. P.S.T. Observed from 7:00 to 9:00 pm. Worked on PEP equipment until 10:30. Closed up 11:00 P.M. P.S.T. Temp. 55° - 48°. Wind - none. Seeing fair.
- 5-11+12
 '76 Koval, Padilla, and Royer. Worked on auto-guides. Relay work well. Sensing head needs further internal alignment. Observed Comet West. Tunit, 3 well-separated nuclei. 60° F. no wind. Full moon and high wispy clouds.
- 5/30-31/ Bilodran & Jones: 8:00 P.M. - 1:30 A.M. (P.S.T.). Took measurements of PEP Housing for new photometer head which is under construction, then did some estimating. Jones: 13 estimates, including 12 sanctums; Bilodran 15 estimates, including 12 sanctums. No wind; temp 57°-50°. Transparency good; Seeing good to fair. All equipment in good working order.
- May 31-
 June 1 Royer, Padilla, Marcario & M. Jones. 5 Occultation timings. Astrophotography still main worm gear bond + drive motor stopped. Fixed in morning. Works OK now. Time for Claude to come up to retune main worm and align polar axis. Took another circumpolar shot to accurately determine needed correction. 50° F - no wind. Clear
- June 5-7 Padilla, Marcario, M. Jones
 6-5 Repaired loose boards on observing platform, and reset Dec. circle to read properly. Did tricolor shots of Sagittarius cloud on spectroscopic emulsions, plus some

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variables (2 inner sanct) then photographed NGC 7331 and NGC 6946 on 103aF. No wind, a little smoggy, temp $\approx 55^\circ$ seeing & transparency good.

6-6 20-30 mph wind out of SW, much scattered cirrus in the evening. 10:15 pm, we are really zapped over with cirrus; no chance for clearing, time to vamoose.

June 7-8 Kowal - Padilla - Royer. All functions of auto-guider worked. Guides to 12" of arc in moderate wind. Sensitivity to be further improved by Charles Kowal. Much moon-light. Used polaroid #57 + w/ 29 filter for 20 min. exposures. Halleluia! 58°F .

June 17-18 Ford, Bilodeau, Jones (R). Fair transparency & seeing. Opened at 9:30 PM PDST. Var. star obsns: FD = 6; Bilodeau = 9; Jones = 5; 4 sanctums. Temp. $66^\circ - 58^\circ$. Closed dome 11:30 PM PDST. All equipment working OK except play in R.A. is increased since Nov. '75. Light wind.

June 18-19 Ford, Bilodeau, R. Jones. Fair transparency seeing poor to very poor. Temp $67^\circ - 58^\circ$. Last of moon rising before closing up at 3:00 AM PDST June 19. Var. star obsns: FD = 10; Bilodeau = 11, Jones = 8; 8 sanctums obs'd. Equipment OK (visual). Variable winds, never a serious problem.

June 19-20 Ford, Bilodeau, R. Jones, Leyle Hutton. Transparency poor (thin clouds), then clearing slowly to good by 11 PM PDST. L.A. Excelsior Club members here as visitors, with 3 smaller telescopes (portable) mounted on grounds near the obs'y. About 15 visitors present. Temp. $58^\circ - 53^\circ$, variable winds, no big problem. Var. star obsns w/ 18": FD = 15; Bilodeau

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- June 19-20 = 17; Jones = 6; Hutton = 12 (\pm). Crescent moon rising before closing dome - not troublesome, Seeing only fair, occasionally poor. Carpenter present, but did not observe vars.; Tom Cave also present. Both had view of Omega Centauri under poor transparency conditions.
- June 20-21 Ford, alone. Opened up at dusk, worked vars. in E. + N.W. Moderate wind, W., temp. 60°-57°. Var. stars obs'd: 26, w/17 sanctums included. Equipment all OK. Closed up at 00:15 AM PDST June 21.
- June 21-22 Ford, alone. Opened at dusk, worked vars. in E. + S. Windy, increasing to strong (W.) by time of closing 01:00 AM PDST June 22. Temp. cooler = 58°-48° F. Seeing generally poor, transparency fair to good. Var. stars obs'd: 20, including 12 sanctums. Chart checking (new prelim. charts) on several non-sanctum fields. Equipment all working OK.
- June 22-23 Ford, alone. Opened at dusk, worked vars. in 14^h, 15^h, 16^h, + 20^h, 21^h RA, mostly previously unobserved in June. No wind, temp 62°-58° - comfortable. Seeing only fair, occasionally poor; transparency fair. Total estimates = 26 of which 12 were sanctums. Chart checking new prelim. charts on several non-sanctum fields. Equipment all working OK. Closed up 00:35 AM PDST June 23.
- June 23-24 Cragg + Ford. Opened at 9:30 PM PDST. Started working vars. in west, sanctums mostly, with 11^h RA. Proceeded to east as the night progressed. No wind, temp 62°-57°; comfortable.

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June 23-24 (continued). Total est's: CA = 39 (including several binocular objects); FD = 31. Total FD sanctums = 18. Obs'g stopped by dawn late, 04:30 AM PDST June 24, w/ crescent moon up. All equipment working OK. Transparency & seeing both fair to poor. Temp. 64°-57°;

June 25-26 Ford, alone. No wind at start, but light wind at end of obs'g. Opened up 10 PM PDST. Temp. 66°-60°. Concentrated on sky-checking of new charts & sketches for vars. in Cygnus & Aquila as rec'd from Jerry Hazel (Youngstown, N.Y.). Obs'd six of these also made 15 other var. & est's for total of 21 obs'd of which 7 were sanctum. Equipment all OK for visual. Closed up 1:30 AM PDST

June 26-27 Ford, Carpenter, Pat Maguire (1st time obs'g var.)
Opened ca. 10:30 PM PDST. Maguire & 2 others set up outside bldg w/ cameras including Mag's 5-inch Celestron. Most time spent in teaching Maguire how to obs. vars. Estimates: FD = 15 of which 3 sanctum; Carpenter = 1 (sanctum) = No Set 70; Maguire = 3. No wind, Temp. 67°-62°, seeing fair, transp'y fair to good. Closed down 01:30 AM PDST June 27. Maguire remained (in his van), doing photog'y w/ his 5-inch Celestron.

June 30 - July 1 Ford, alone. Opened 9:15 PM PDST. Wind gusts to 25-30 mph. Temp. 66°-56°; seeing fair to poor in moments; transp'y fair. Crescent moon, setting. Obs'd total of 24 var. & est's, of which only 5 sanctum "cleaning up" monthly obs'g record for June which has been total of 219 est's

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June 30 -
July 1

(Continued) by FD. Closed up 0:15 AM PDST July 1, by which time seeing was generally poor. Was able to glimpse 212503 VZ Agr at est'd $\approx 165^\circ$, however, in fleeting moment of good seeing.

July 2-3

Ford + Pat Maguire (part of time). Transp'y fair; seeing fair to poor; no wind; Temp. $70^\circ - 64^\circ$. Opened dome 10:15 PM PDST. Crescent moon, setting. Obs'ns: (FD) total 20 including 9 Sanctum. All equipment (visual) OK. Closed up 2:00 AM July 3 PDST. Maguire stayed on; photography w/ his 5" ~~the~~ Celestron, outside of bldg.

July 4-5

Ford, Bilodeau. Opened 10:45 PM PDST. No wind; Temp. $70^\circ - 68^\circ$; seeing + transp'y fair to good near zenith. Crescent moon, setting. Obs'ns: FD total = 7 of which 6 Sanctum; Bilodeau total ca. 9. Stopped obs'g 12 midnite PDST.

July 5

Crew arrived 8:00 AM (\pm) to raise dome and install ^{top} new wheel track. Present: Rich Olson (Ash-Dome Co.); Ford; Bilodeau; Royer; Carpenter + B. Jones later in AM. Dome raised up on blocks ca. 3 inches; old (warped) top plate of track + wheels + axles on same removed by 12 noon. In afternoon, leveled the new track following installation of same, mixed dry cement grout and Royer + Mr. Olson filled open space between top + bottom tracks with grout. Job finally finished ca 7:30 PM PDST.

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- July 6 Crew arrived at obs'y ca. 9 AM, finished the installation job. dome lowered back onto wheels now on new top track plates. Rotation tested, re-adjustment made to focus upper shutter automatic shut-off switch. Cleaned up, secured telescope for long leaving, left obs'y ca. 1 PM.
- July 10 Marcario & Kowal. Tested automatic guider. No luck. There seems to be a light leak in the prime focus camera.
- July 11 Marcario & Kowal. Tested automatic guider. Guider works perfectly!! Took photos lasting 30, 45, and 60 minutes.
- July 13 Royer + Fr. Frank Ribotta. Vacuumed whole observatory + sand out of newly gouted sail. All in good shape. 80° F during day - no wind low sky.
- July 16-17 Padilla & Sorensen. Set up for astrophotography. Clouds moved in shortly after dark and remained all evening.
- July 17-18 Padilla, Sorensen, Campbell & Fignon. Color astrophotography at prime focus & piggy-back 35mm. Seeing & transparency fair. Temp 68-60°. Light wind.
- July 18-19 Padilla & Kowal. Testing of automatic guider. All functions working perfectly. First plate taken using auto guider made with astrophotograph of Scorpio region - 25 min exp. Also 30 min exp of M13 at prime focus on Fujichrome.

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July 19-20 Kowal - Padilla - Royer
Did tri color plates on p Oph region,
used auto-guider. Worked perfectly
except for some field-rotation of plates
developed plates during next exposure.
No wind 66 F. Transparency good,
but not perfect.

July 23-24 Padilla, Sorensen & Inyon. Set up for astrophotography
at prime focus + Royer astrograph. Set up
autoguider. Clouds in the east at dusk moved
in and remained all night.

July 24-25 Padilla & Sorensen. Set up for astrophotography
Scattered high cirrus at sunset. Increasing
clouds covered entire sky for the rest of the
night. Lightning in the east.

July 27-28 Royer & Padilla. Arrived at dome in afternoon.
Sky clouded over with billowing summer
thunderheads. Worked on autoguider. Remove
diaphragm and punched small hole for reticle
illumination. Replaced loose screws on refractor
offset controls. Sky completely overcast at nightfall.
Thunder & lightning storm. Showers. The only water
leakage found in dome was directly above work
table in S.W. corner.

July 28-29 Padilla. Scattered high cirrus clouds by nightfall &
increasing throughout evening. Tested out
autoguider and managed to get a couple of color
photos at prime focus during breaks in the
clouds.

July 29-30 Padilla. Another night of cloudy weather. Used
autoguider and took prime focus photos in clear
areas of sky.

Aug. 1-2 1976 Padilla and Royer. Did tri-color on Scutum cloud. Auto-guider produced flawless plates in spite of much wind. Used below lens on auto-guider - guided on 8th mag. star.
 O plate = 28 min. D plate = 32 min. red plate 55 min.
 Transparency good, seeing poor. 60°F.

Aug. 2-3 Padilla + Royer. Waited for 1st quarter moon to set. Did tri-color on North American nebulae region
 blue = 30 min. yellow = 33 red = 55
 All functions perfect. No wind, no clouds, seeing average. 54°F. 58°F to 52°F
 Observed that an intruder tried unsuccessfully to jimmy tool room lock. Suggest a dead-bolt there also.
 Big worm wheel very solid on this half. It could not be tighter without binding. Good tracking motion!

Aug. 16 17 Royer Did 90 min. red exposure on γ Cygni nebula. All network nebula shows, with hardly any skyfog. Some field rotation shows - worst fault.
 Moon rose at 11:12 ending exposure.
 Autoguider worked perfectly - had to slow dec. motion or retool downstair a little.
 No wind, good transparency, 55°F.

Put new worm-gear oil on all worms - improves motion and takes out some backlash. Compliments of Ron Tressel, our guardian angel.

Field rotation seems due to insensitive gain setting on auto-guider rather than to mis-alignment of polar axis. Keep the gain below 7 volts helps.

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Aug. 17 Poyer. Scattered clouds made photos
18 impossible. Looked at various show objects
with guests headed by Mrs. Jeanette Croso
of Catholic Daughters considering possibility
of obs. tours for their campers.

Buried iron by Plover Pine. Need more
time to reinforce back door that Claude
installed lock on. Key hangs inside
front door.

Aug. 26 Poyer. Astrograph + guide scope + Royal auto-
27 guides to finish tri-color areas in Cygnus.
Developed plates here - Excellent!

Clear, no wind & 70-60°F.
Saw periodic comet P. Aret - not impressed, but
may try a photo tomorrow.

Aug. 27 Poyer + guests. Did more astrograph
28 photography. All worked fine.
Mancini + guests arrived to
continue photography with many 35 mm
cameras attached. Clear night - no wind
60°F. Left scope for star party tonight.

Aug. 28-29 Bilodeau, Jones & Carpenter: arrived 8:30 P.S.T.
for Star Party with Excelsior. No One Showed!!
The Night was a ~~wash~~ wash-out! TEMP. 70°
Seeing too bad for serious work. Left @ 10:00 P.S.T.

Aug. 29 Bilodeau & Jones: arrived 12:30 P.S.T. to inspect
blg. All okay. Left 1:15 P.S.T.

Aug. 31 Mancini + Poyer - Bubble Nebula
Sept 1 in 1st quarter moonlight - Red filtered. 1½ hrs.
Autoguide worked perfectly. Seeing excellent.
Transparency good. Did new variable star field

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on 18" and 4" - Photoserial plates. V 482 Cgg.

9-22
23

Carpenter painted outside of shutters.
Poyer raised polar axis 4' of arc
and did polar test plate.

This maneuver was easy - all
bolts were loose. Worst problem was
again tightening in worm so it did
not bind - worm plate moves around.

Scattered clouds - no wind - 60° F.

Oct. 6-7

Poyer. Clear - no wind - full moon 60° F.

Polar alignment continued. Photo indicated 13'
more correction needed. 1st step - raised axis
13' and shifted to E. 1' - Results =
axis too high by 2.5' and too west by 5'.

Second step brought alignment to within
ability to measure on polaroid - alignment
is within 2' - probably less but photo-enlargement
will have to be made. I started at 20' from
alignment.

Using caliper micrometer + trig. this operation
was quite predictable, in fact - FUN!

important
note →

I discovered in tightening and running the
main worm gear, that our problem is not
off-centering of main gear - but that it
is warped or ^{not square on} moving the worm in and out
from the pier is the solution. The present
setting of $\frac{10}{64}$ " W side and $\frac{4}{64}$ " E side is good
but probably should still move outward
slightly. Somewhere there is an average
setting that will work well all around.

Any drive difficulties of R.A. motor,
or fast R.A., is due to binding in
main worm.

To free - loosen worm bolts + tap worm assembly

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toward the pier, or away from pier. If still too tight, drop whole assembly slightly rather than tapping in or out.

Oct. 13 Royer - Did 30 min. on A.U. Cyg - prime
14 focus + astograph. Used about $\frac{1}{10}$ number of corrections - almost none in dec. - Excellent plate!
Moon came up and started timing occultations till batteries in radio gave out. Will have to keep a battery charger here.

No wind - good transparency - seeing average.
60°F - rel. humidity 45%

Set up auto-guider - but switch to chopper didn't work - replaced switch in morning OK now.

Oct. 20 Royer and guests, Pete Mc Hale, I.A.G. Fire Dept.
and 21 and his wife Kay and sons Chris and Bill.
Clouds and rain. However a break in East allowed several views of Jupiter and its rotation, and a tour of Double Cluster in Perseus using fast R.A. motion - quite impressive.

Time-tuned worm getting to $\frac{2}{64}$ " and $\frac{6}{64}$ " as suggested other side. Left scope for visual work all systems operating perfectly.

45°F 70% humidity, no wind. Lightning somewhere to the south.

Oct. 27 Royer - Photographed Nova Vulpeculae '76.
28 a 19:21 d 30° 21'. Tricolor on Pleiades + Jupiter with auto-guider. All systems fine. Left visual set up.

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Oct. 30-31 Bilodeau, Jones & Guests. Arrived 7:00 ^{PM} P.S.T.
 All equipment ok. Conducted lecture-demonstration of 18". Temp. 48°-42°; No wind. Seeing 2-3.
 Guests left 11:00 P.M. P.S.T. After class left Bob & I too tired to do any observing. Left 12:00 A.M. P.S.T. Plastic cover for scope, should be repaired or replaced. Canvas cover for E.A. ~~scope~~ axle should be repaired.

Nov. 10 Royer and guests; Jerry Zimmer, Chris + Bill
 and 11 McHale. Made set up + photographed FF Cyp 20 35 37a 18" + astrograph IIaD+mc/2 Autoguider without barlow - 1/2 hour.
 15 min exposure of AP Peg after moon rose at 8:10 P.M.

Looked at Jupiter and moon. Seeing 4 transparency good. 45% rel. humidity - 40°F
 In morning dug new-lattice, patched S.W. corner of roof - cleared weeds. Good crew! Left 18" for visual work

Nov. 13 Ford, Bilodeau, 3 PM. Arrived to check out
 -14 place for evening's work anticipated. All OK.
 Returned ca. 10:30 PM, but clouds came on, finally closed up with no chance of doing obs'g, 00:15 AM PST Nov. 14

Nov. 15 Carpenter, Ford. Opened up 9:15 PM, light
 -16 wind, temp 40°, poor seeing but sky OK except for clouds to S. and remaining there. Total obs'g of vars = 13 including Nova Vul '76 + 11 structures.
 Used FD's new Chau' 10mm eyepiece to good advantage - better than old "high power" eyepiece.
 Closed up 1:15 AM Nov. 16, just as moon rose, crescent

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Nov. 16 Carpenter, Ford. Sky good, seeing poor, clouds
- 17 to S, mostly stationary. Temp. 48° - 44° . No
moon while obs'g. Opened dome 8:45 AM PST.
Var. * est's by FD: total = 10, including 5 sanc-
tum. Closed up 00:45 AM PST Nov. 17.

Nov 17- Carpenter, Ford, Royer, Kowal, and Padilla.
18 Opened dome 9:45 PM, converted telescope from
visual to photographic, including Kowal auto-
guider. After test runs, set on 020227 Z Tri
field, to take photos w/ both Royer astrophot +
focal plane camera on telescope. Exposed plates
from 10:12 to 10:50 PM. Auto-guider working
perfectly, guiding on $8^m(\pm)$ *. Kowal + Padilla
left obs'g ca. midnite. Converted back to visual
mode, Royer + Ford obs'd till 4:00 AM PST
Nov. 18. Total FDest's = 15 including 9 sanctums.

Nov. 18 Royer, 11:30 AM - 1:30 PM PST. Painted hydraulic
cylinders etc. on some lower shutters.

Nov. 18-19 Ford, alone. Opened dome 7:15 PM PST.
Sky good, but w/ increasing haze up in S + W.
Temp. 56° . Obs'd total of 10 vars., including
4 sanctums. Increasing haze + clouds, stopped
at 9:05 PM PST. All equip't OK.

Nov 20-21 Bilodeau, Ford. Opened dome 9 PM PST.
Sky OK, seeing fair to good. Temp. 48° - 45° ,
 56% - 52% humidity. Vars. obs'd (FD) = 20
total, including 14 sanctums, Bilodeau same.
No moon. Good views of Saturn, 300-power with
FD's large eyepiece 10 mm. Equipment all OK.
Closed dome 2:30 AM PST.

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Nov. 21-22 Ford, alone. Opened 8:15 PM. Sky good, seeing fair - at first. Temp. 53° - 50° . Increasing haze cover, from S. + W. finally forced end of obs'g, midnite Nov. 21-22. Var. * est's = 25 total, including 15 sanctums. All equipment OK.

Nov. 22-23 Carpenter, Ford. Opened, 9:45 PM. Temp. 42° - 40° , sky transparency OK, but seeing poor. Var. obs'd: total = 10, including 7 sanctum. (FD); - same for CE. Checked out old (ca. 1960) chart for 051316 XX Tau; CE saw XX Tau at 17^m 2, per sequ. FD removed charts from file, to make revised "g" chart. Stopped obs'g 01:30 AM PST Nov. 23. All equipment working OK.

Nov. 23
-24 Carpenter, Ford. Opened, 8 PM PST, Temp. 48° - 46° . Sky good, seeing fair. Var. est's (FD) = 11 total, including 6 sanctum. All going well until at 10:30 PM CE noticed telescope drive was not working. Inspection showed main drive motor jammed and smoking - burned out. All work stopped, unpacked spare drive motor and prepared to install it on 11/24

Nov. 24-
25 Royer, Ford. 3:30 PM - 6:30 PM. Removed old drive motor, and installed + tested new (spare) motor. A tough job, impossible without off-set screwdriver and lots of patience. New motor, as expected, runs much more quietly and at lower temperature. Returned to W/W for dinner, and back to obs'g ca. 9:30 PM. Visual obs'g only; moon crescent, setting

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Nov. 24-
25 (continued). Var. star estimates: total = 6, including 4 sanctums. Obs'd 210587 X UMi for first time, confirming that new polar axis alignment (Royer) is good — RA circle only 3^m off from X UMi position, and Decl. circle "right on". Temp. 48° at closing, 00:30 AM PST Nov. 25. Seeing fair, no wind.

Nov. 27- 3-4 PM. Ford + 2 visitors, Mrs. Jeannette Anderson May + her son Stephen May (21). Performed ceremony at the obs'y, in accord with the Will of Curtis C. Anderson of Minneapolis Minn., returned to W/W + dinner. Temp's turned cold = 24° F., no wind, clear skies.

Nov. 29-
30 Ford, Annal. Opened dome ca. 7 PM PST. Moon 1 day past first qtr., but not excessively troublesome; good sky, poor seeing, temp. 30°-28°. Light wind (from east) annoying. Vars. obs'd; total = 22 (FD) including 10 sanctums. Spent extra time on checking fields for 072404 RX Mon and 074701 & AE CMi where Annal's previous est's indicate a wrong ID for the var. Closed up shortly before moon set, 00:40 AM PST Nov. 30.

Ex. 1 and 2 Royer. Poor seeing, some N.E. wind, and gibbous moon. Some visual estimates. Checked auto-guide accuracy — sensor must be moved inside of focus! Guides better than possible with eye over long periods. Guides beautifully at prime focus. Left plates and filters for winter work. Cauched all of SW outside. 32° F. Pretty morning

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Dec. 15 16 Marario + Royer. Clear night - some gusts of East Wind 36-30°F 45% humidity
Did tri-color plates 18" and 4" of Bubble Neb. NGC 7635 with autoguider! No problems! Seeing only fair.

Dec. 21 22 1976 Royer and father Frank Ribotta. Redid red plates on Bubble Nebula due to dec. drift on previous plates. I think dec. relay got hung up on previous long exposure. Seemed to be OK now after adjustment. Went 100 min. Slight E wind 50% humidity 30° to 24°F No clouds. Seeing fair.
Bubble Neb. r.a. 23:25 dec. 60:55'
Blue = 48 min. Yellow = 54 min. Red = 100 min.
focus 45 focus 48 focus 6
long exposure shifted due to loose cables hitting sensor!

Dec. 27 28 Royer, Inc Hale bro., Jerry Zimmer. Tricolor of Orion Neb. r.a. 5:33 dec. -3:30
blue = 40 min focus 46 Temp. 30°F
yellow = 46 min focus 49 45% hum.
Red = 75 min focus 8 some E. wind

Dec. 28 29 Royer + Padilla - Clouded out - Had set up to do Monoceros tri-color as Orion
r.a. 6:28 dec. +9:40

— H —

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Feb. 9 10 Royer + Padilla. Happy New Year! Walked and skied in over patchy snow cover - took 1 hour. Building high-cirrus clouds allowed no work tonight. Everything in good shape - no leaks!

Feb. 16 17 Royer + guests - Alma Kertz, Jane Somerville, Jerry Hill, Robert Matzger, Lisa Morcette