

"Midnight Ramblings"

Volume 2

by Randy Pakan

*April '91
to April '94*

April 18/91

First Light for the 16"!

Perfect timing, my scope has been finished for about 2 months and Berry just finished the mirror (16" f/5) in time for the spring galaxies. Out of the past 10 day dark window around the April new moon I've been out 5 nights!

Berry did a fine job on the mirror, Jupiter looks great and galaxies are actually starting to look the way they do in photographs.

The scope is everything I hoped it would be and more. The base & mount is a bit wobbly but nothing I can't fix. Building the shed to house it was also a brain storm, the mirror is cool & ready to go and no more stairs! Not only am I seeing good detail but it is well defined, for example the arms in M51 I have seen before, but in this scope they are very definite and you can see thicker & brighter spots in them, also we saw an arm coming off of it's companion! Sketch on next page.

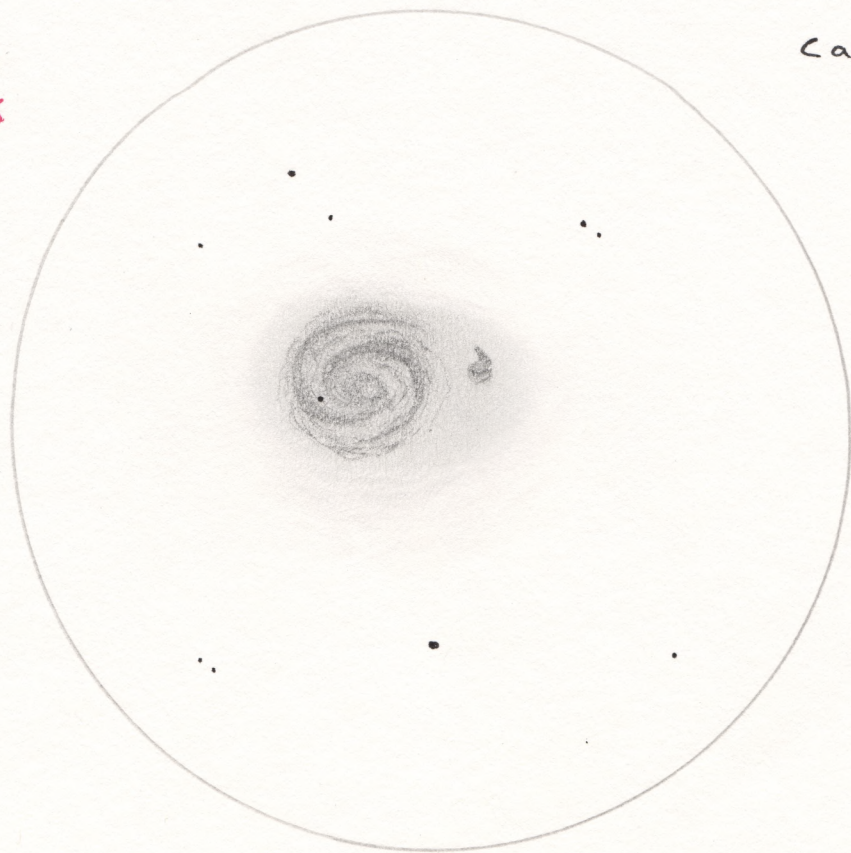
April
91

April 16

On April 11 and 16 M51 was superb, directly overhead and both nights were very transparent. On the 16th we also saw an arm on the companion NGC 5195. Dave commented that this was the best view he ever had of it. At the moment my 16" is outperforming the 17½. No problem, but in fairness the 17 needs re-aluminizing badly.

M 51
220X

Canes Venatici



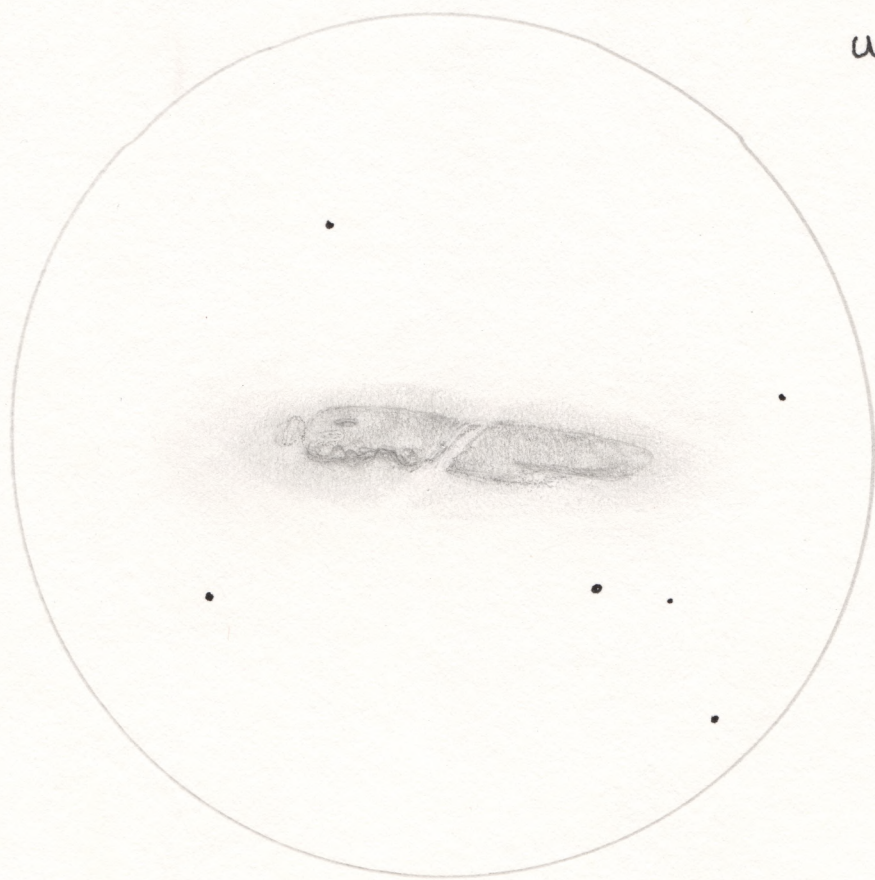
Note: We could see the arm on 5195!

April 13 1991 Trans. E*****

The air was very transparent and it seemed that I could use 420x on everything! M82 at 420x showed not only the dark core but a lot of structure. Both halves had definite shape to them and the left half had a dark spot and a separate chunk off of the end of it. Also the left half had a lot of mottling and knots in it.

M82
420X

Ursa Major



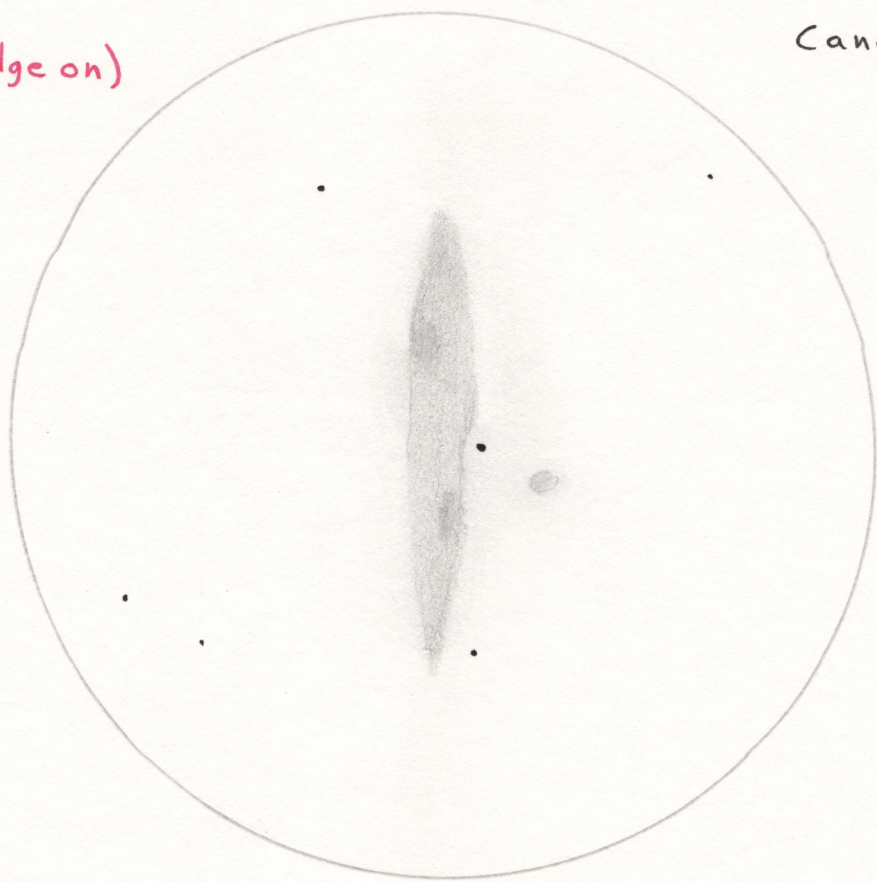
April 16

The massive edge on 4631 and it's tiny companion 4627. It was very impressive as usual but with some bright areas I've never seen before. Mag 9.7 12.5' x 1.2'

NGC 4627
NGC 4631 (edge on)

220 X

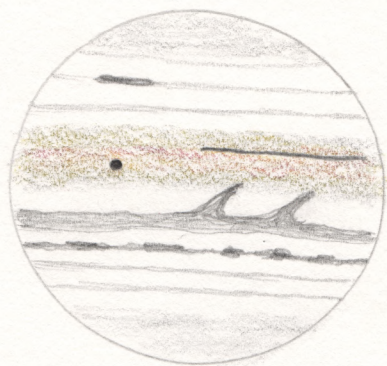
Canes Venatici



April 11

This is the first time that Jupiter has been good since I finished the scope. And it is GREAT! Seeing is excellent. 1/2 hour after sunset. 9:30 M.D.S. Europa shadow transit. The details were very crisp and well defined. Fantastic!!

Europa



230X

Europa SH.Tr.
2 large festoons in N.E.B.
large Dark Band in Center
thin Black line in Right 1/2 of center Band
Trace of S.E.B.
S. Temperate Belt with dark section
S. Polar Belt glimpsed
N. Temperate Belt full of Knots
2 Belts glimpsed N. of temperate Belt
Orange color to center Band.

April 12.

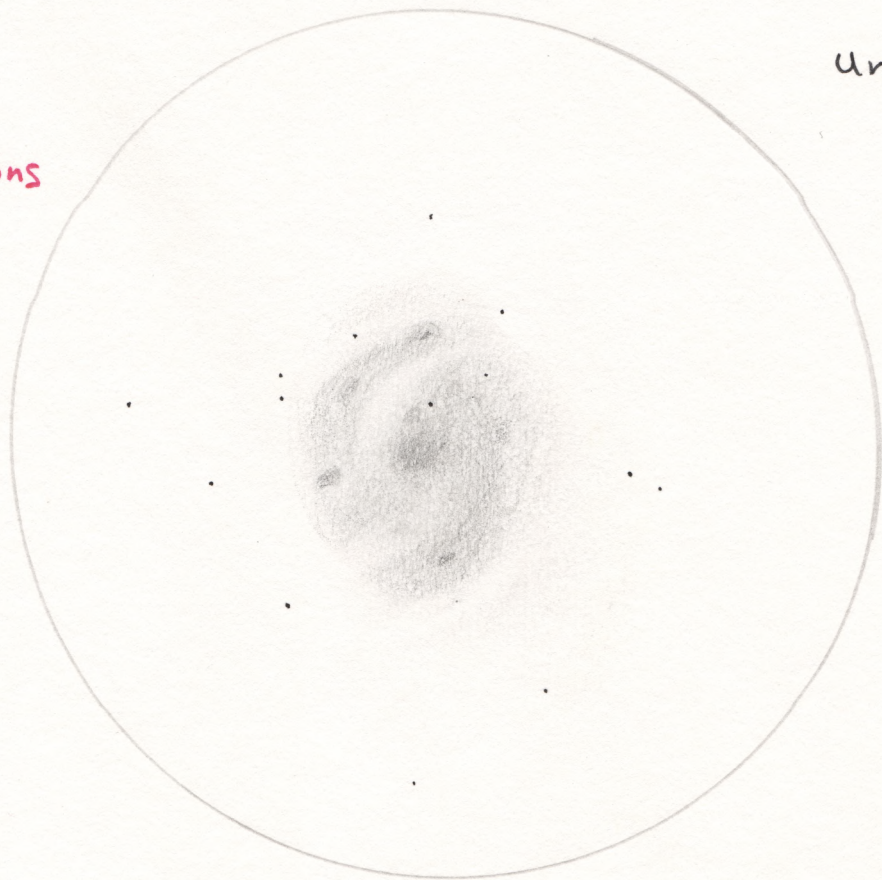
M 101, I could see a bit of the arm structure, the core was bright, and there was what appeared to be 5 regions of H₂. Or it may have been bright areas in the arms but I don't think so.

M 101

220x

H₂ regions

Ursa Major

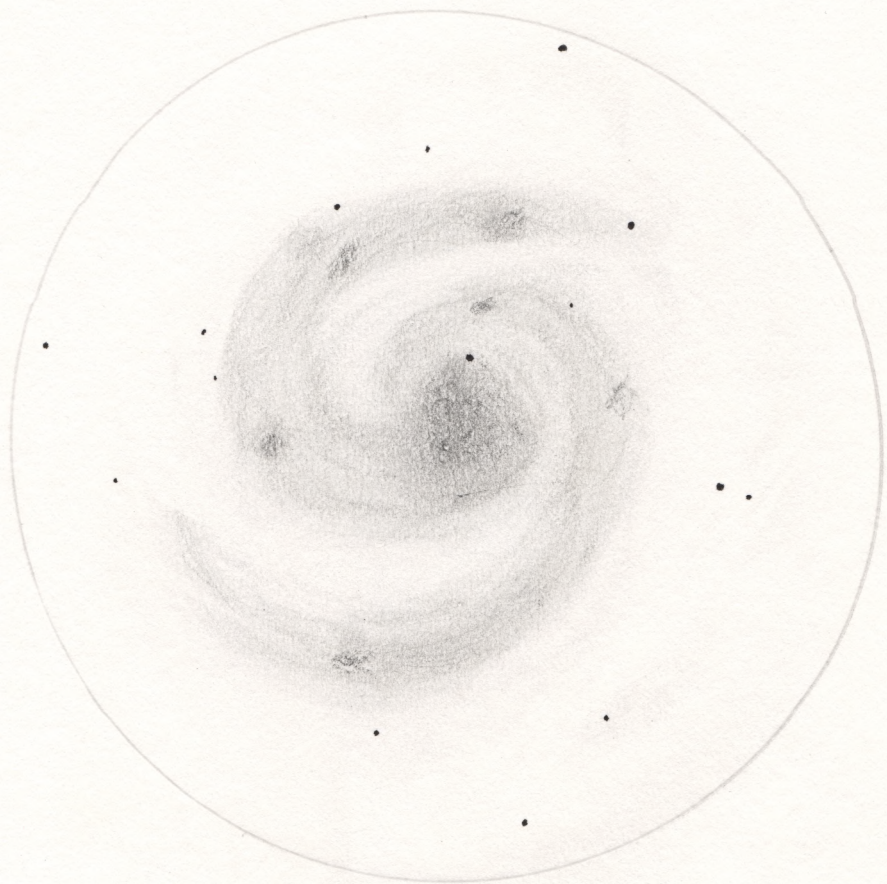


May 4

Another look at M101, this time Murray, Paul, and I were surprized at the detail in the arms! the H₂ regions were about the same as before but the structure in the gal was excellent!

M101

220X



The arm structure is excellent tonight!

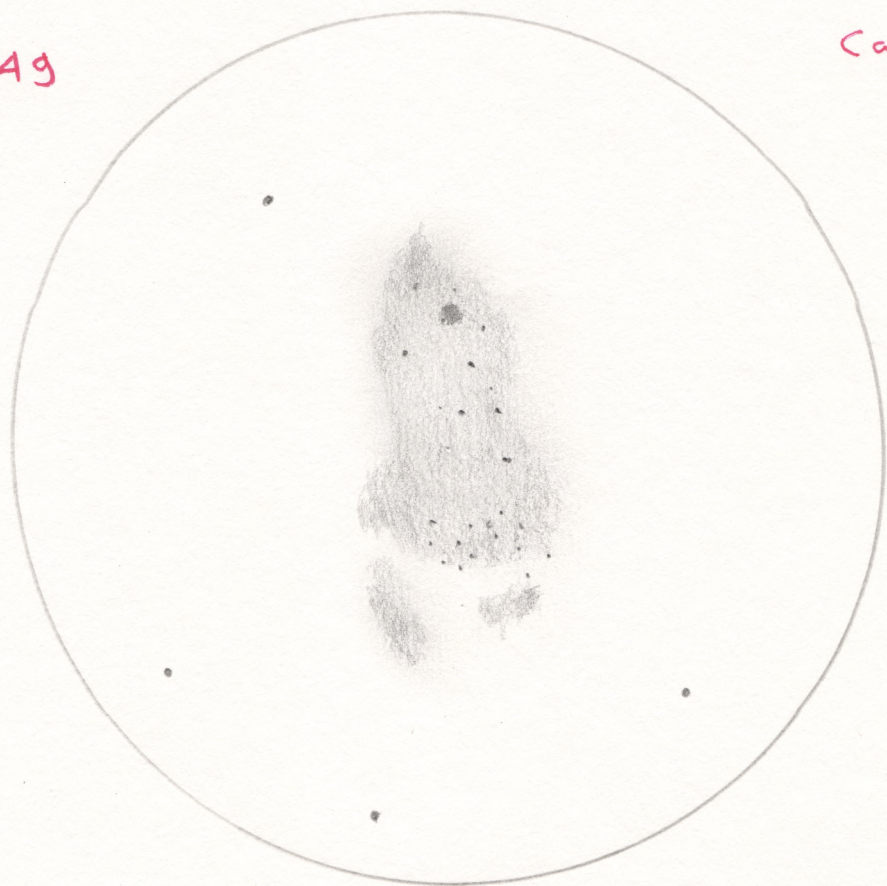
May 4.

NGC 4449 in Canes Venatici. An irregular galaxy. Looks like a ~~2~~ Diffuse nebula. Large odd shape mottled. An arm or separate section off one end. 9 mag. Lots of embedded stars. (According to Webb the embedded stars are 81 H2 regions!)

NGC 4449

420X

Canes Venatici.

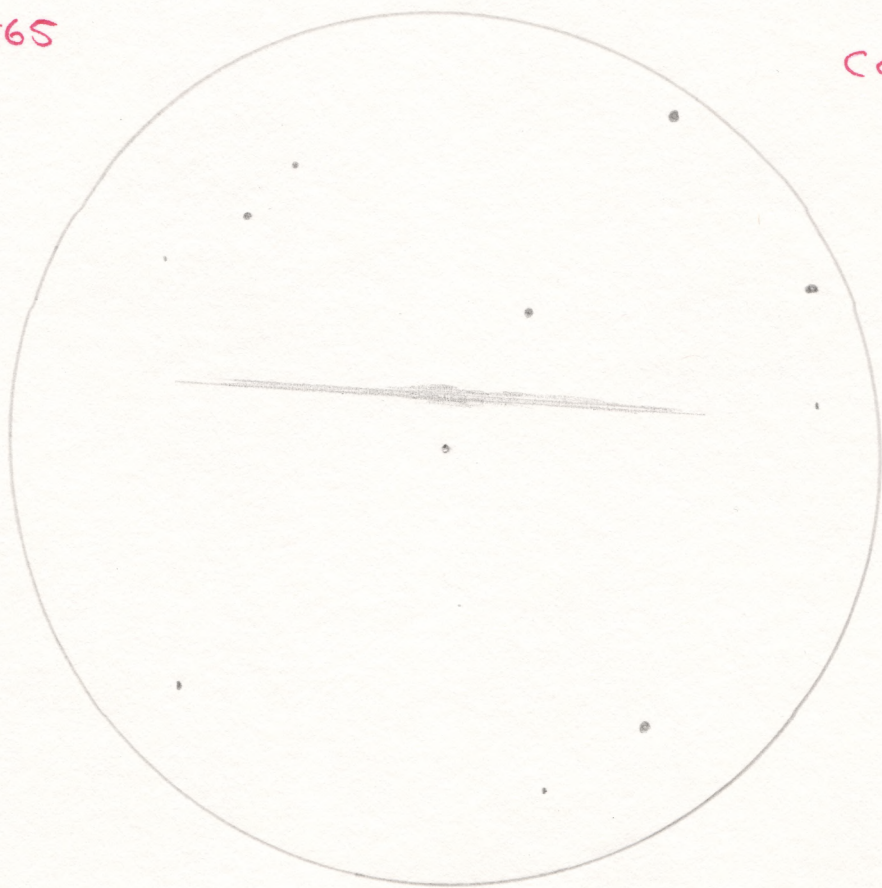


May 4.

At 50X 4565 filled $\frac{1}{2}$ the field. A long thin line that washes out at higher powers. Sometimes low power is nice. I've looked at this many times at high power and never realized just how Big it really is!

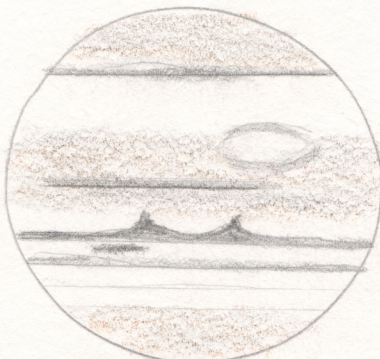
NGC 4565
50X

Coma Berenices



Jupiter has been excellent all week. It is high at sunset and for 45 min. before it gets dark the seeing is excellent! As it gets dark the air temperature drops and the atmosphere starts to move. Also at the same time your mirror has to start to equalize & you get tube currents. Jupiter has a lovely salmon color at dusk but when the sky goes dark the color disappears. There is a lot of things happening at the S.E.B now specially around the Red spot. A Fantastic week!

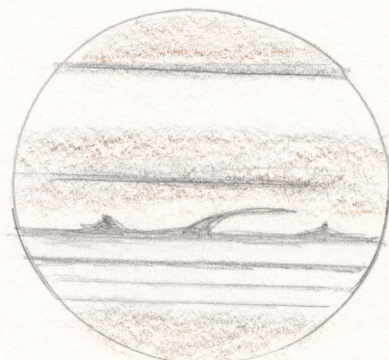
April 29



Dark line center of Disc. →

10:05

April 30

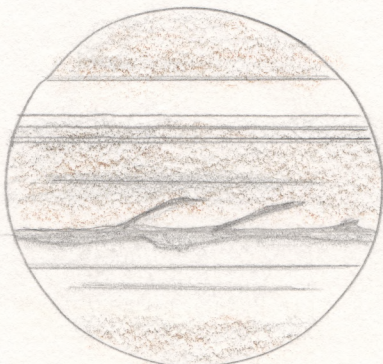


9:45

Published in Astronomy Dec 91

↓ May 84

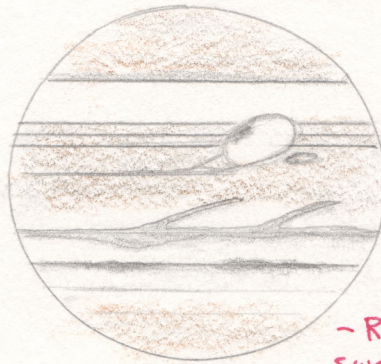
May 3



S.E.B. 3 lines!

9:40

May 84



9:50

- Red spot sweeps into dark line & followed by small white oval. 10:40

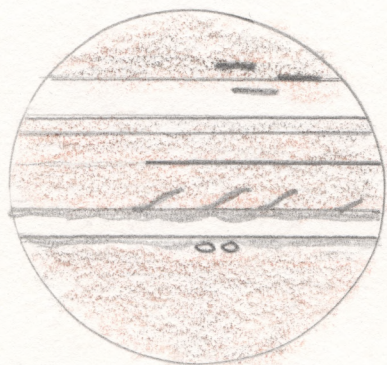
- Dark spot on upper left of Red spot

16" 230X

Note: The 7mm at 280X is much better. I must buy one!

May 6 9:15 Seeing Excellent

Jupiter: 2 tiny white eyes in the N temp. belt, 2 comet like markings on either side of the S.S. Temp. belt. A Dark line in the center of the Equatorial band. The S.E.B. consists of 2 thin lines.



16"
230X

Venus 9:00 Venus was not even a naked eye object yet, I swept it up with my finderscope! the sky was bright blue and the disc was very crisp.



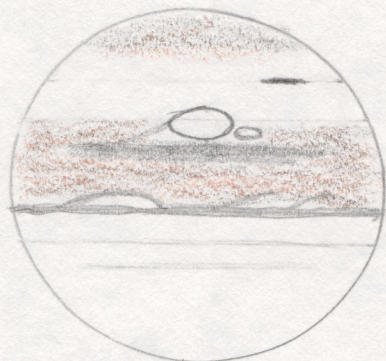
420X
yellow filter

May 28

10:05

seeing Good.

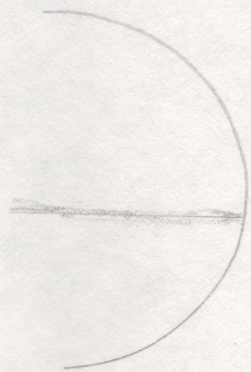
There is a lot of activity around the red spot. There is a white "Bay" just in front of it and a white oval just behind it. The dark patch in the equatorial band has widened and darkened. 2 festoons and one loop festoon.



16"
230X

June 5

First light for the $12\frac{1}{2}$ " f6. Just by luck there was a Jupiter event happening. was eclipsing and the difference in their size was striking!

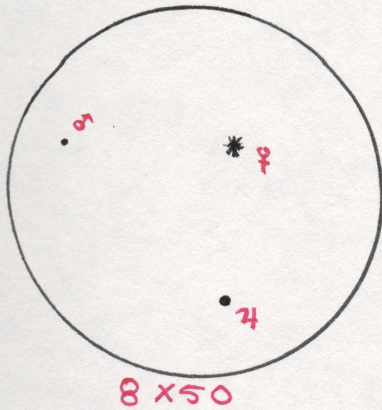


$12\frac{1}{2}$ " f6
215X

June 18

11 p.m. still not even close to dark.

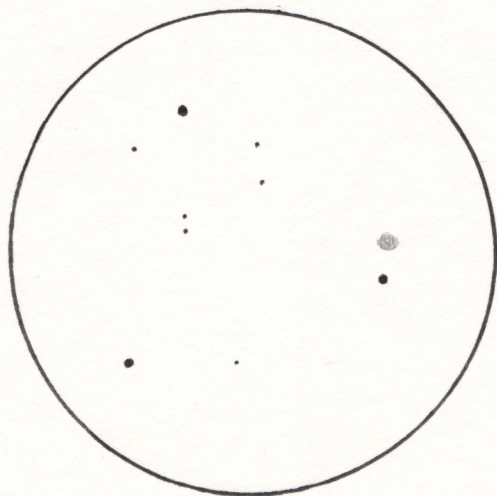
A nice conjunction of Mars, Jupiter and Venus. All were within a 2° field. This is an occurrence that happens only every 10 years!



July 14

Going out at around 10 o'clock and enjoying what little Astronomical twilight there is - dark from around 12:30 to 2:00. Looking mostly at old favorites that I haven't seen in the 16, so I won't be recording most of my observations for at least one year!

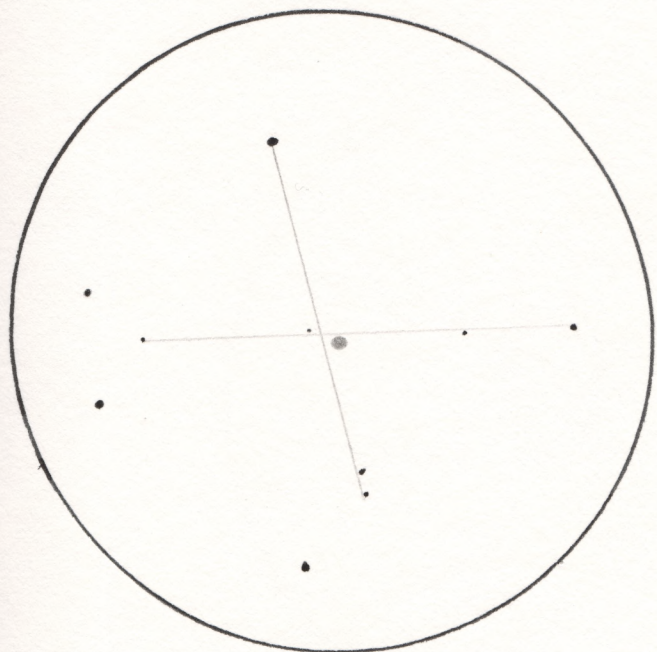
Palomar 9 Lucian Kimbal gave the coordinates for Pal 9 in the exact same spot that NGC 6717 is. One in the same? 6717 is indeed a globular. page 340 Uranometria. Very easy object even at low power




Mv 9.2
Size 3.9 arcmin.
Sgr.
340 Uranometria.
18 hr. 55 min
-22° 42'

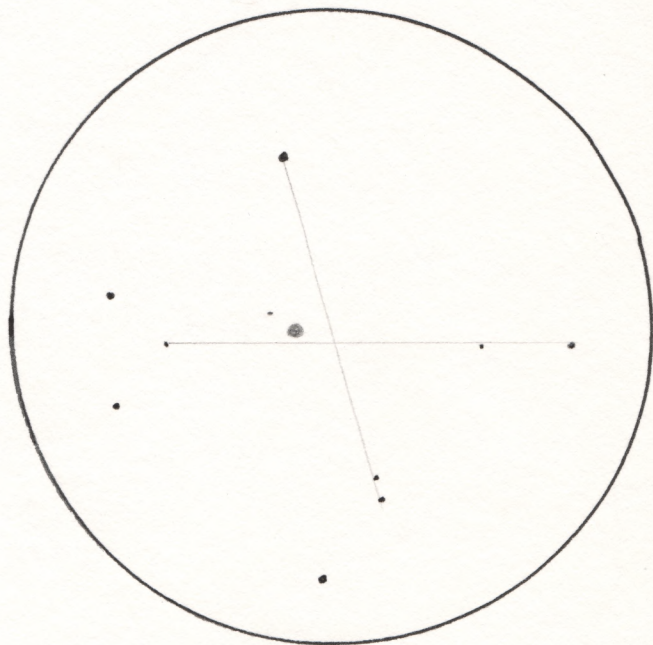
July 1A cont.

Finally a positive observation of Neptune and Triton. Neptune was a lovely round disc and Triton a pin point of light that followed Neptune as it moved slightly over a $2\frac{1}{2}$ hour period.



1 A.M.

Neptune
and
Triton

420 X



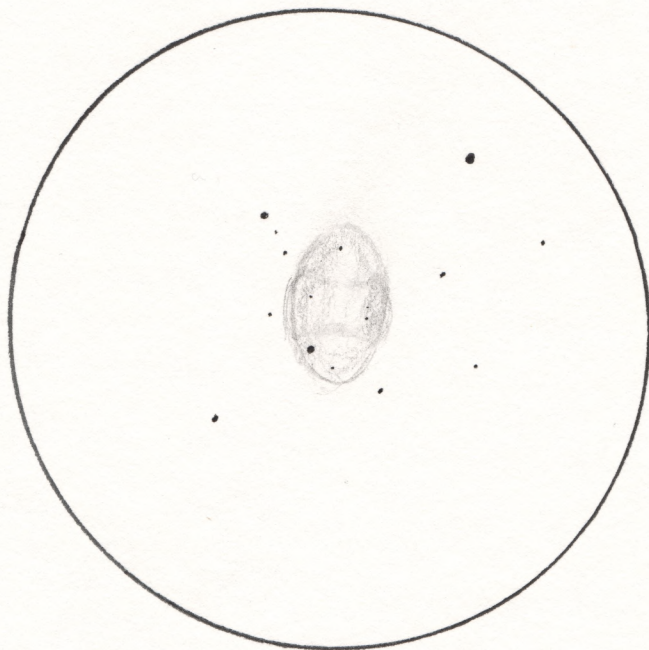
2:40 A.M.

July 14 cont

Looking at a lot of old objects.

M27 looks like a football in the 16" rather than the traditional "apple core". Filaments could be seen at both ends, or uneven density.

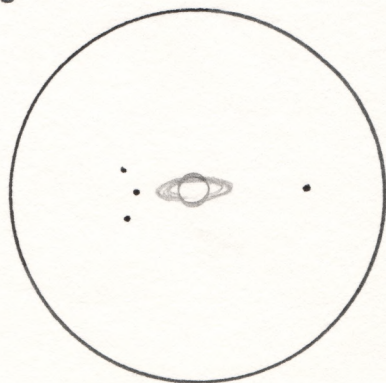
M27
Dumbell



260x
OIII

Saturn's moon were in a nice crescent on one side with titon off to the Right.

π and moons
at 230x



August.

We went out a few times in August. On the 7th we had a low of $+20^{\circ}$! It was unreal observing in cut offs and a tank top, and lots of misquotoe gunk. We stayed until sunrise - broke my record, got home at 5:15! But I spent the night looking at all the Sag. stuff that I hadn't seen in the 16 so I have no new sketches of objects. We went out 2 more times in August but we had some kind of murk at high altitude that people are blaming on a volcano and the burning oil wells in Kuwait.

I missed one good night because there was a stupid "Aurora Alert" on the WWV short wave forecast that is supposed to be accurate. I stayed home and there was no sign of Aurora! So much for that bullshit!

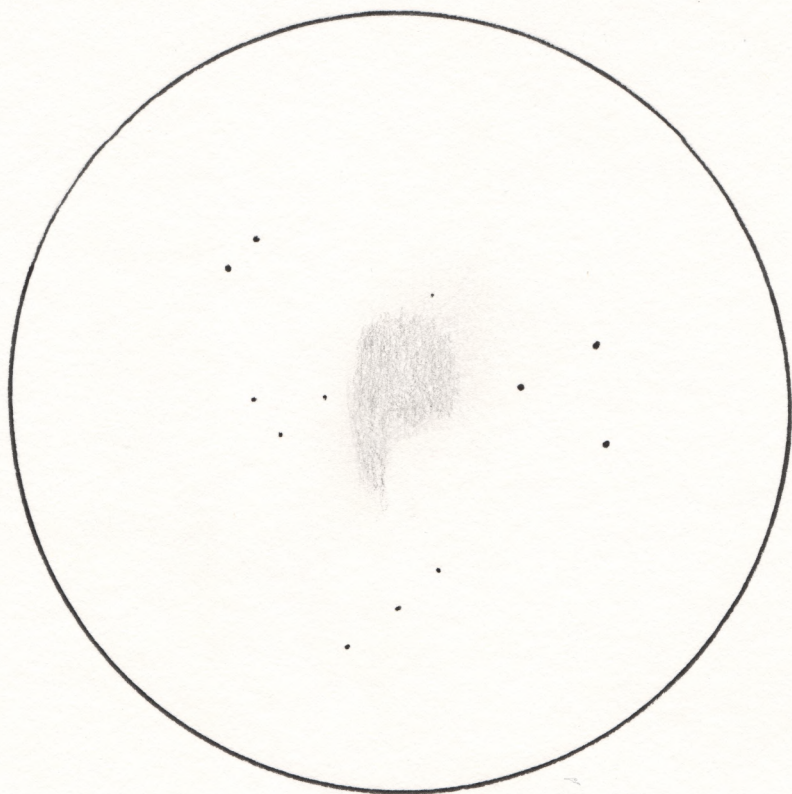
Sept 8

Again looking at old favorite objects but one that showed a neat fat arm was NGC 6946 in Cygnus. A Boxy looking galaxy that looks like a nebula with an arm. Very soft and large.

In Webb they decrided it as square shaped in a 16" and an arm could be seen in a 30" - we could see this arm! faintly but we could see it.

NGC 6946
galaxy
Cygnus

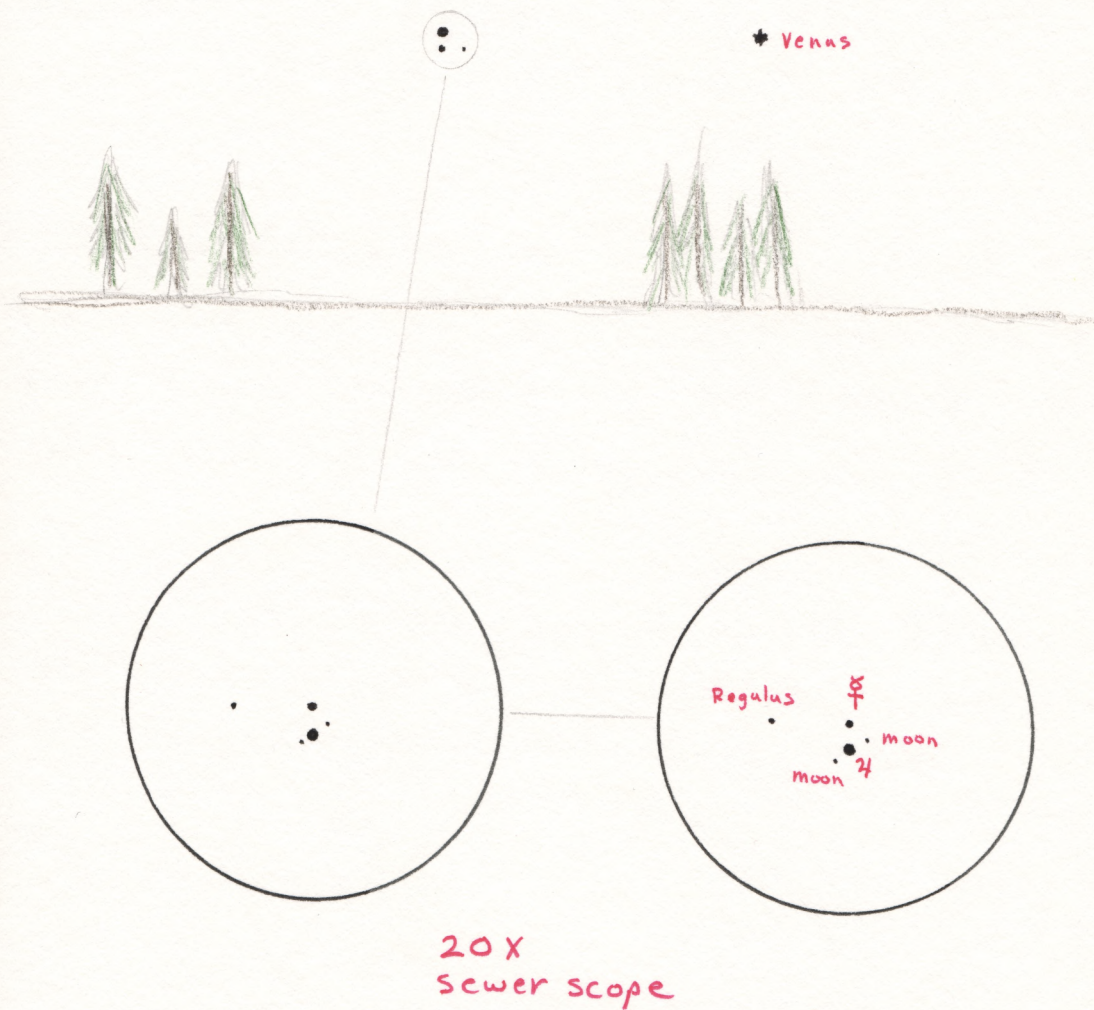
9 mag.
14' x 13'



180x

Sept 10

Another rare conjunction of planets was Mercury, Jupiter, and Regulus all within $\frac{1}{2}^\circ$. Venus was off to the right.



Sept 14

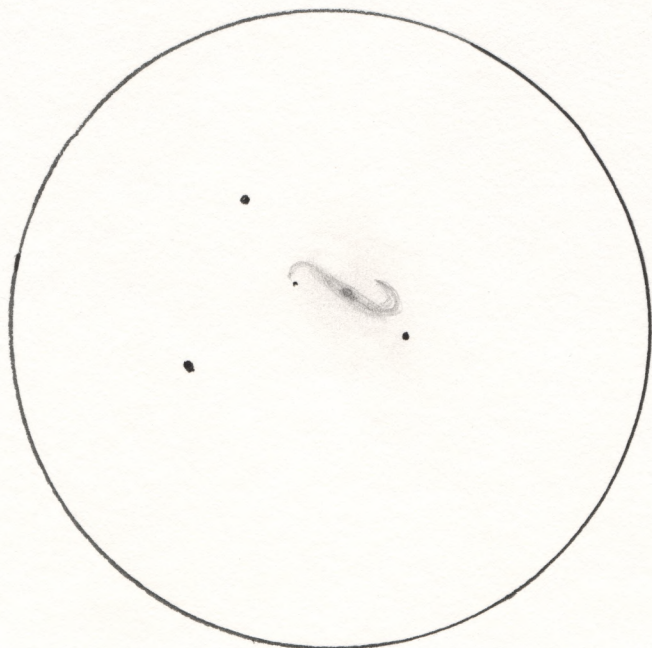
Finally a clear dark night with no clouds or Aurora. 0°. 8:30 → 2:45.

NGC 6791 in Lyra: a challenge O.C., a large faint sprinkling of stars among a rich field. Very nice.

NGC 520: The peculiar galaxy that looks like a "body part". It appeared like an "upright" edge on.

Gamma Andromeda: A lovely sight. at 230x the small blue one would split when you tapped your finger on the tube! At 420 it would split nicely as the seeing came in and out.

NGC 7479 A classic barred spiral. It has a stellar nucleus and the East end is brighter. The arms are faint but there. Pegasus.



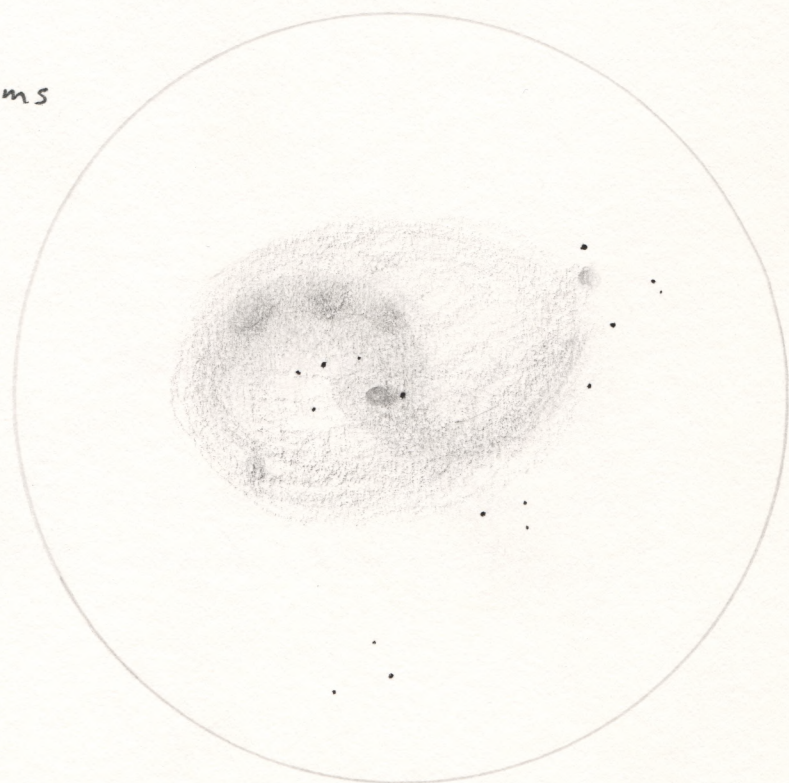
mag 11.6
3' x 2.5'

Oct 11

Only got out once this month but thank god it was a spectacular night! +27° in the afternoon and a low of +10°. No dew, no Aurora, no cloud, excellent transparency and a black sky! I only did 3 new drawings because we spent a lot of time looking at old objects and seeing them properly for the first time. It was strange seeing Orion rise at 2:00 in Summer like conditions. This was the first night for my new mount (3rd one) and it tracks flawlessly at all powers with virtually no drift. I'm very pleased with it!

M33

For the first time the Arms were quite easily seen. The Right side (East) sweeps up to the bright HII region NGC604 and the left arm contains 3 bright clumps of HII regions. Bright clump or knot at the end of the left arm.



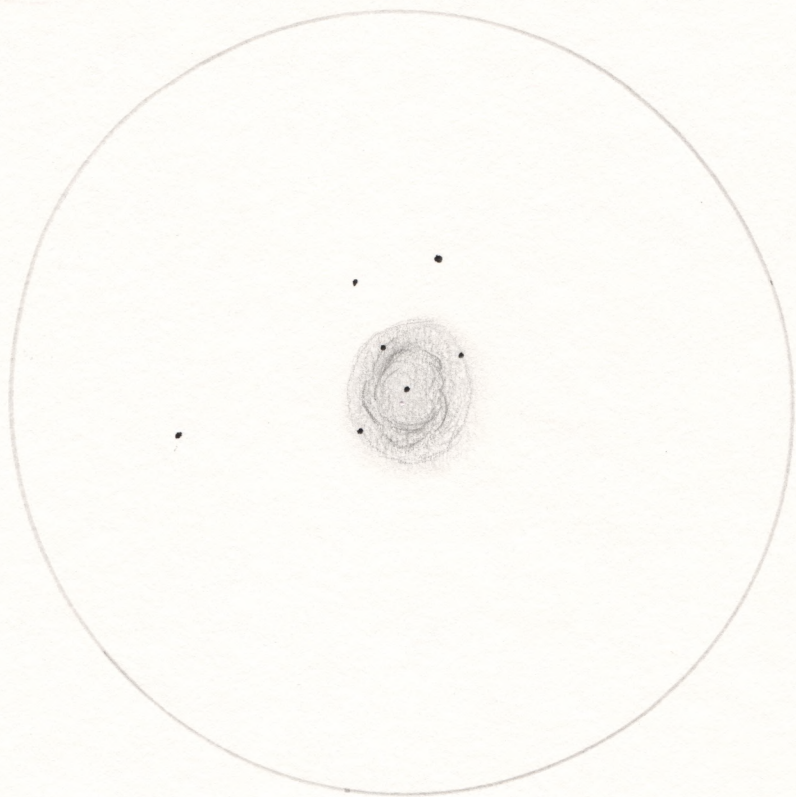
100x

Oct 11 cont.

NGC 246

Giant P.N. in Cetus, 240" x 210", 8th mag.

Bright and round with lots of filaments. Four stars embedded. Slight greenish tint.



230X

OIII filter

Very wispy filaments with averted vision. well defined outer shell. Uneven brightness. lovely!

Oct 11 cont.

Stephens Quintet

I will never forget this view! For the first time we could actually easily see all 5 galaxies with no question whatsoever. And after a few minutes they started to look quite bright and easy. After 4 years of looking at this object this was a very rewarding moment. We were all quite pleased.



The double is the brightest, the one to the S the largest and the one to the West the smallest and faintest.

Nov. 10

It's been a bizarre month since the last observing (Oct 11). The temperatures plunged to -23° a week after the $+27^{\circ}$ on Oct 10. Record snow falls, 15 cm. at a time, freezing rain, and cloud cloud cloud!

Today we finally got a break, an overnight low of only -4 and a clear (or so we thought) night.

It's dark by 6:00 so observing sessions can be as long as one likes. From 7:00 through 10:00 the sky was O.K. for clusters and the milky way stood out quite well, but there is some kind of high crap in the air, we've heard that it is fallout from Mt. Penatubo, a volcanic eruption that happened this summer, it so we are in for a bad year!

It was pretty much a wasted night because nothing was much to look at. ie: M31 at the zenith barely even showed it's dust lanes! oh well it was still a very

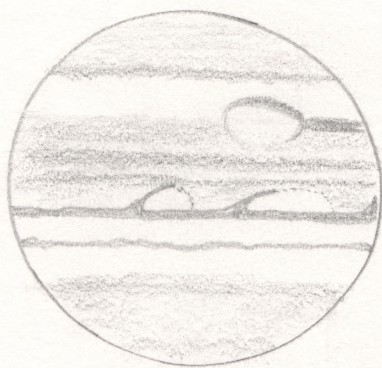
fun night! ~~pp~~

Dec 6

Mount Penatubo has put a lot of dust into the atmosphere, we are seeing alot redder sunsets with purple above. And quite often we can see the "Dust ripple effect", Thin ripple clouds, row upon row, running perpendicular to the horizon. The Dec. club night looked as if it would be o.k. but I lost my shed keys and the van broke down so I couldn't go. As it turned out it was a crapy night and I missed nothing. There hasn't been good observing since Oct 11.!! The mornings have been clear but every night clouds up. Back to backyard Jupiter observing! This months Astronomy mag. ran one of my 7 sketches from last may. Paid \$25, I guess I can quite my day job now!

Dec 14 Sat. -10°

Awoke a 6 a.m to a clear sky so I quickly ate a "Cold Buster" bar and was set up and sketching by 6:30. The mirror was cold and I saw no tube currents. The Red spot was just coming around.

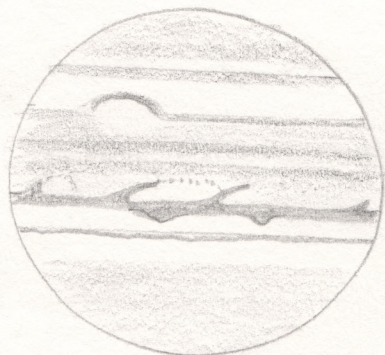


6:30 → 7:00

230X seeing V.G.

Red spot very faint, hollow seen as an "Eyebrow" No S.E.B. in front of Red spot but obvious behind it.

streaks in central Band.
2 Bright white area between festoons. 2 lumps on N part of N.E.B.



7:40 - 8:10

The lovely salmon color seen last May is much more pale now,

Christmas eve was the only Dark transparent night we had in Dec. and of course ~~no~~ nobody went out!

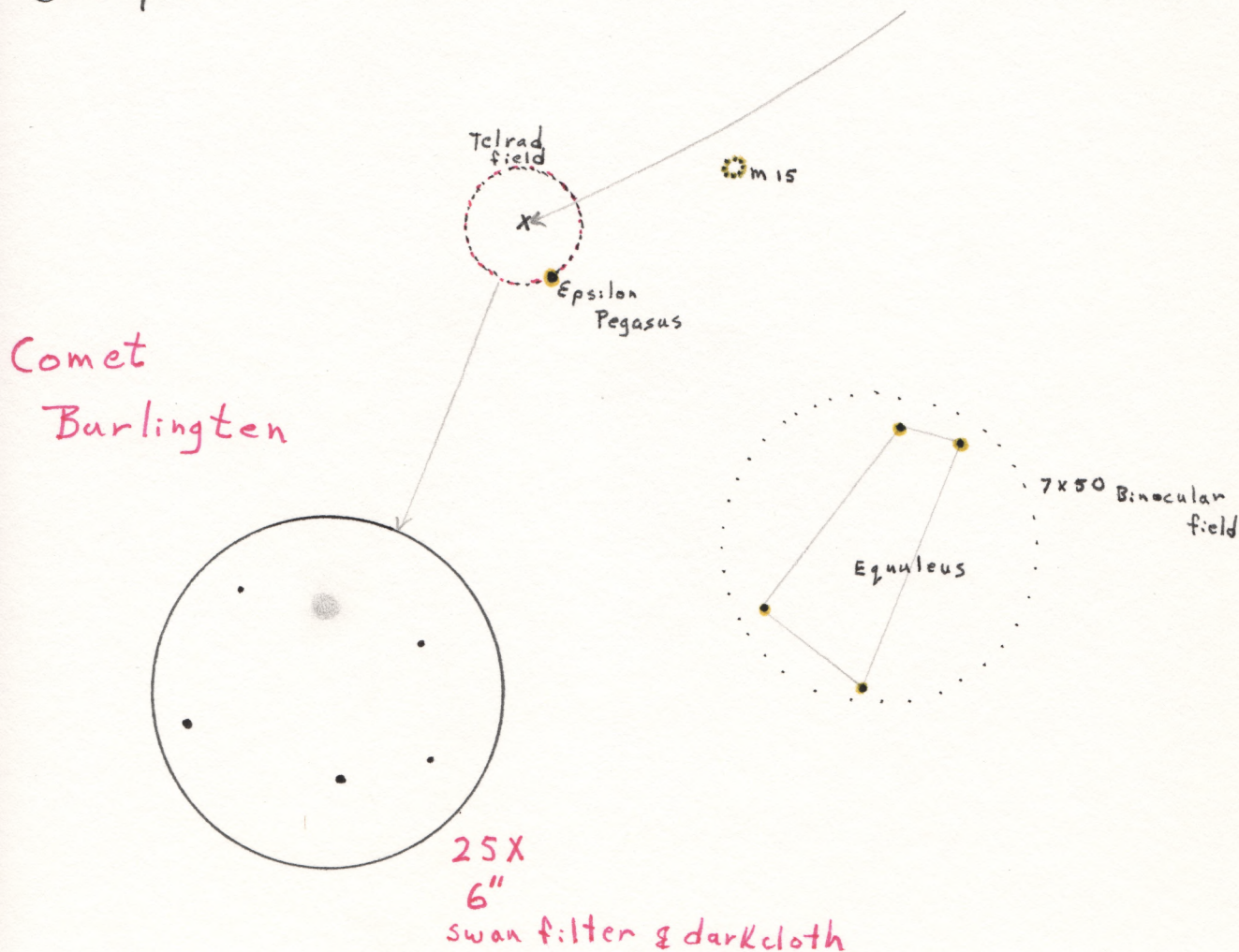
Jan '92

A Bad start to the year, the weather was warm and it appeared to be clear but when we went out the temp plunged to -20 and there was lots of high cirous cloud. -wasted night!

Jan 9+1

A new comet, comet "Burlington" discovered Dec 23rd. At 9th mag. a good back yard object in the 6". I couldn't see it but with the swan it became faintly visible.

6:20 p.m.



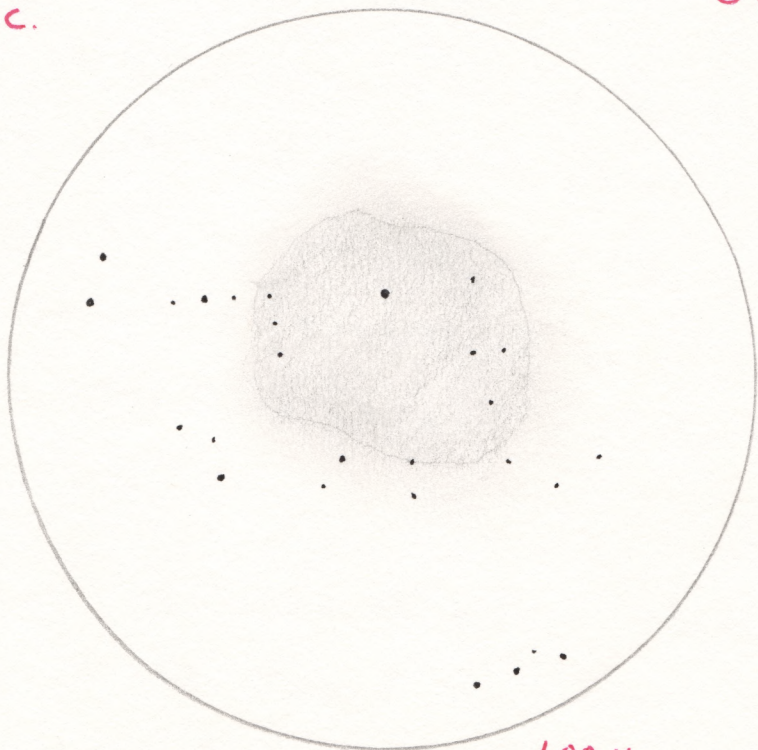
Feb 7

Finally a pretty good night after 3 months of high cloud and penatubo dust. The alnimo or whatever it's called has kept temperatures way above normal. we hit plus 10! several days in January. But along with the hot weather we also had clouds clouds clouds!

Tonight was -7° , and both the seeing and trans. was O.K.

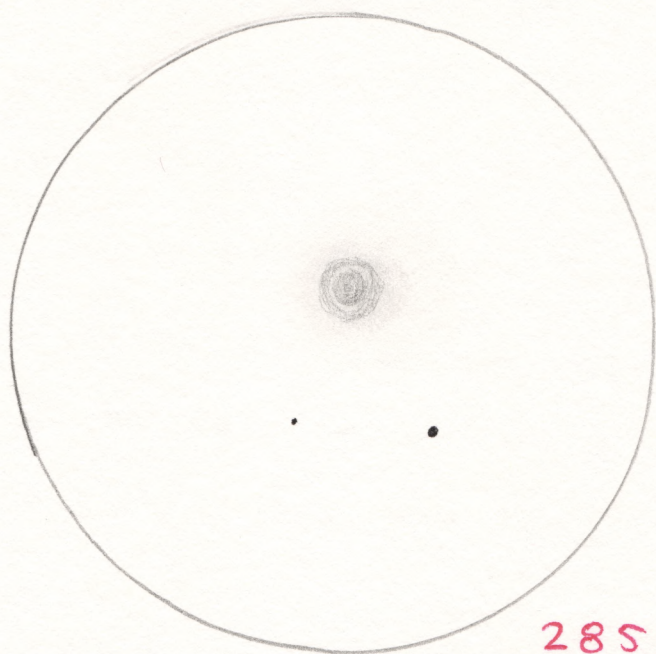
NGC 2174/75
Neb. o.c.

Gemini



100x
OIII

NGC 2392 the Eskimo Nebula



285X

OIII

The outer shell was fainter than the inner disc and quite well defined. There was a dark spot in the center of the disc and with averted vision I thought I could see other dark markings pop in and out. Quite a nice view!

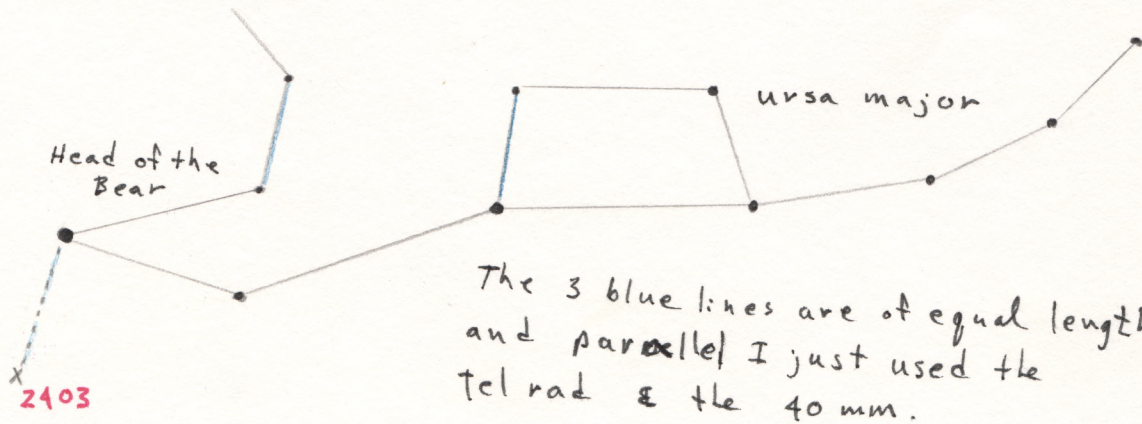
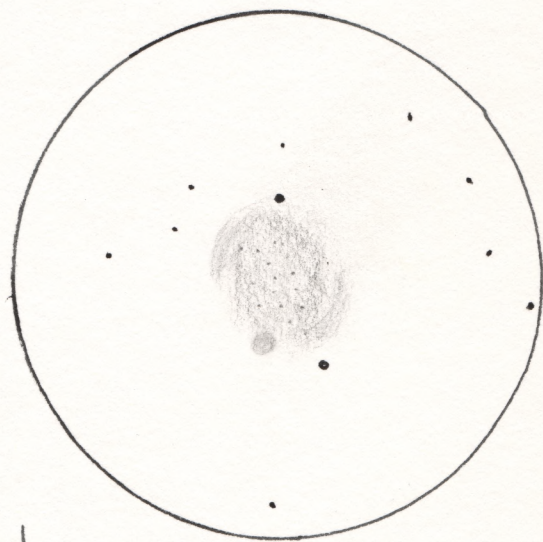
I looked at several other objects but didn't want to spend too much time sketching after such an observing draught!

Feb 28

A low of $+4^\circ$!!

Not a great night for seeing or transparency but we are all so starved for eyepiece time that it was great just to be out and finding objects even if they didn't look like much. The lot was mucky and icy, you were either slipping on ice or stuck in the mud. I chose the mud. I only did one sketch and that was mainly just for future use.

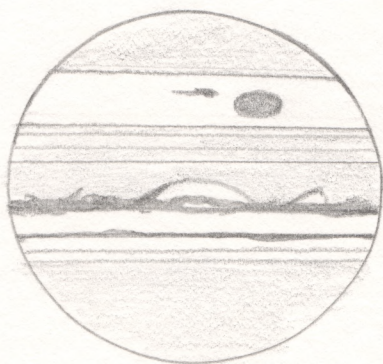
NGC 2403 webb describes it as a magnificent spiral with 109 H II regions 2 easy arms and a bright knot that is 2404. The H II regions are easy, and so is 2404, but there is only a hint of arm structure with averted vision. It's very hard to star hop to but I did finally find a method that is not too bad.



March 29

+4° trans-poor seeing Excellent****

It was a clear day and should have been a good night, but it never did get dark, we figger it's still dust in the upper atmosphere. But Jupiter was fantastic! The best seeing I've ever had. At 420x the image was rock solid for minutes on end with slight disturbances for a second or so! It was like looking at a slide!



420x

11:00 p.m.

April 3

+1°

The darkest night I've seen! At 8:30 when I arrived it was so black I couldn't see my poncet on the ground to polar align it! Yet we still had waves of junk in the air at times. Seeing was poor, trans was very good but patchy. Some galaxies were great and yet some (like M51) were very bad. Overall a really good night. NGC 2403 showed dozens of H II regions as pin points with the O_{III} filter. The H II regions also showed well in NGC 4449 but the structure was not as good as last April. I think I glimpsed Leo II but I need to go back for a second look. NGC 1710 an edge on in Coma looked like it had potential, it was showing some structure.

April
92

April 25.

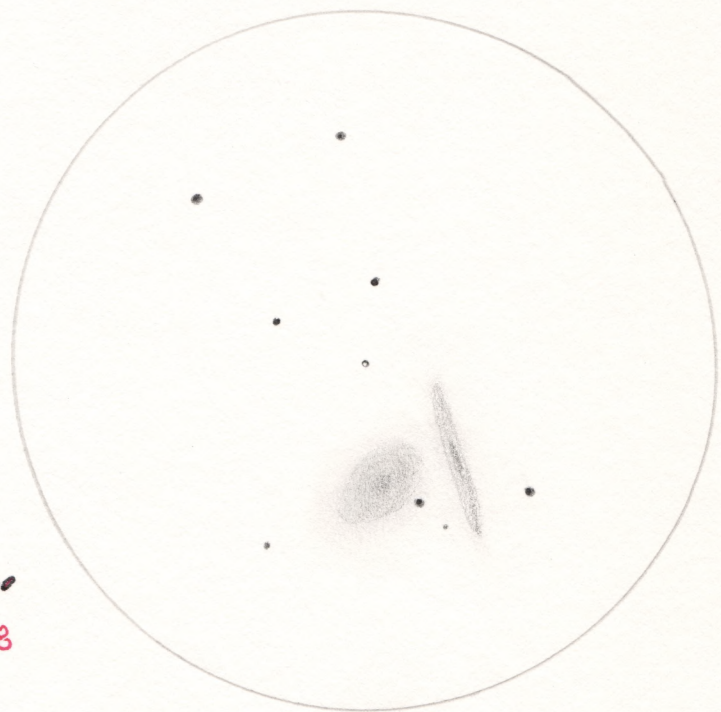
Not really black until 11:00 but
Z was very good until then. Seeing and
transparency both were above average.
Two new objects worth sketching were
2 pairs of interacting galaxies.

NGC 4302 / 4298



Pg 193 urano
near m99

4302
4298

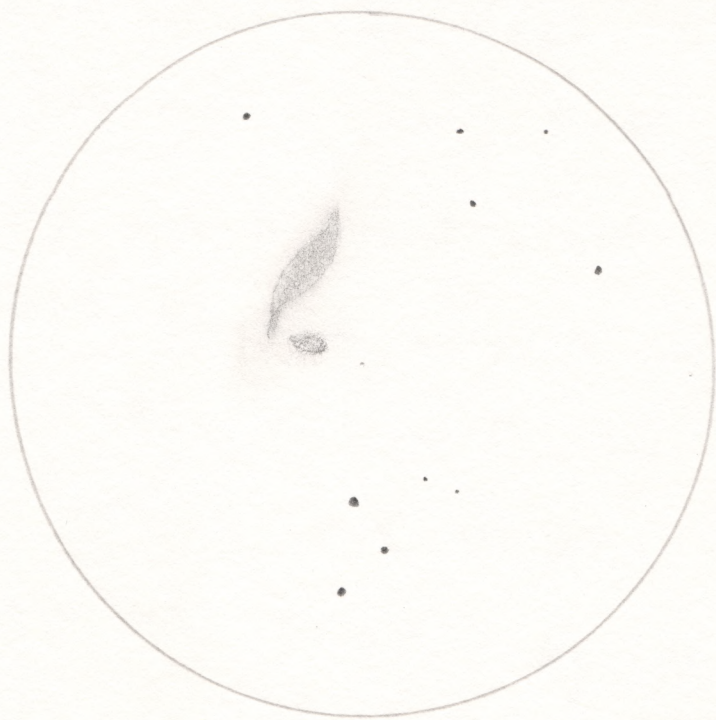


A spindle and an oval that appear to almost be
touching. 11.4 and 11.6 mag.

NGC 4485/90

An interacting pair of peculiar galaxies

4485 oval shaped 10 mag. 4490 long slightly
S shaped 12 mag. the ends of the two reach
out to each other. Just off the end of canes
Venatici



May 2

A real good night, from 9 → 2:30, dark at 11:00 and very black from 11:30 → 2:30. Didn't find any known objects so no sketches. Tried for Pal 5 and Pal 14 but no luck they are both difficult or else the night wasn't as good as it appeared.

July 6

Start of a new year. '91 was plagued with penatubo dust, cloud, and in general a very poor year.

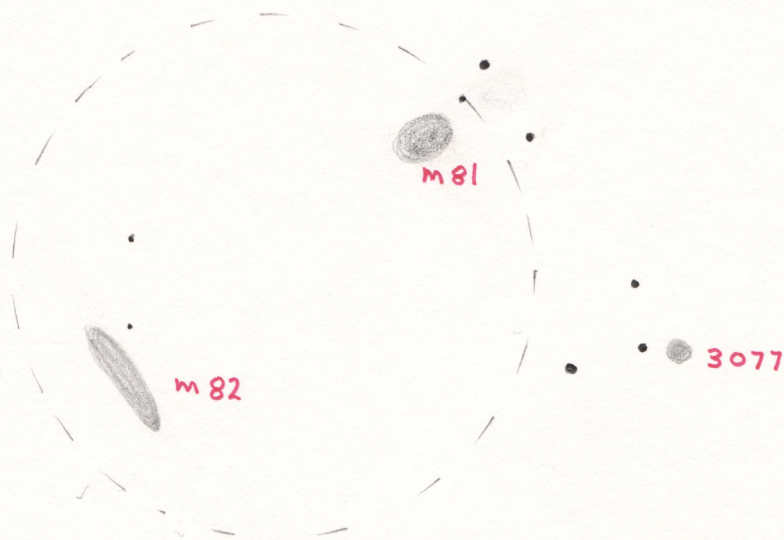
Today was a great start for the season. Comet Shoemaker Levy is right next to M81 M82 and will also be passing right by M108 and M97. It was pouring rain at 9:00, by 11:00 there was a hole in the clouds, I set up, by 12:00 it was clearing and by 1:00 there wasn't a cloud in the sky!

cont.

Comet Shoemaker / Levy

Backyard
July 6 1:20
Seeing poor
trans U.G.
100x

● 2976



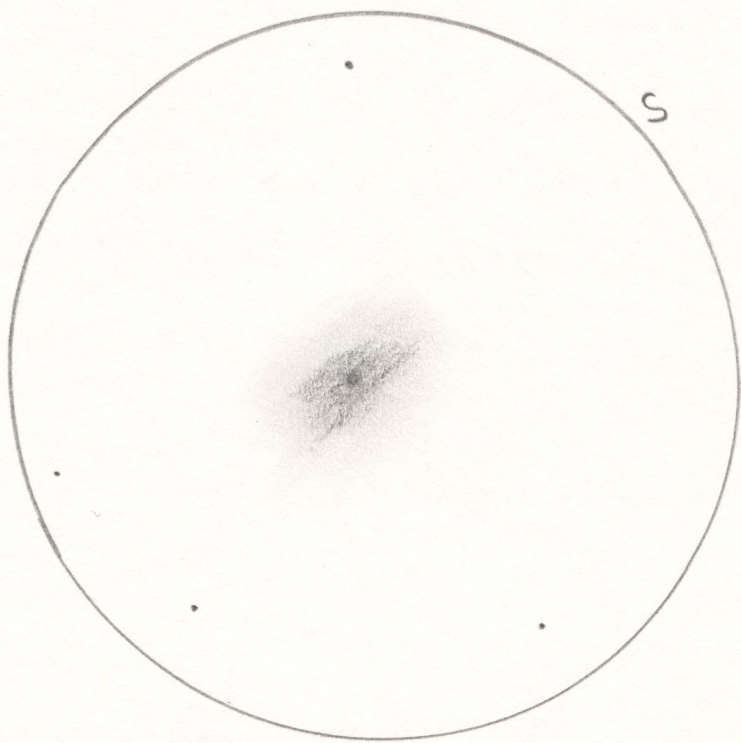
● comet

Dense core
aprox. 9 mag.
2/3 size of m81

Excellent night!

Shoemaker/Levy July 10 92

In 4 days the comet has brightened to 8 mag.
and is larger with an odd flare to it.



420X
Swan filter

almost stellar core and round shape that flares
oddly N. & S.. Too bad the moon is so full
because I think that it would be quite
a sight from a dark site. I could barely
see M 81 & 82 tonight!

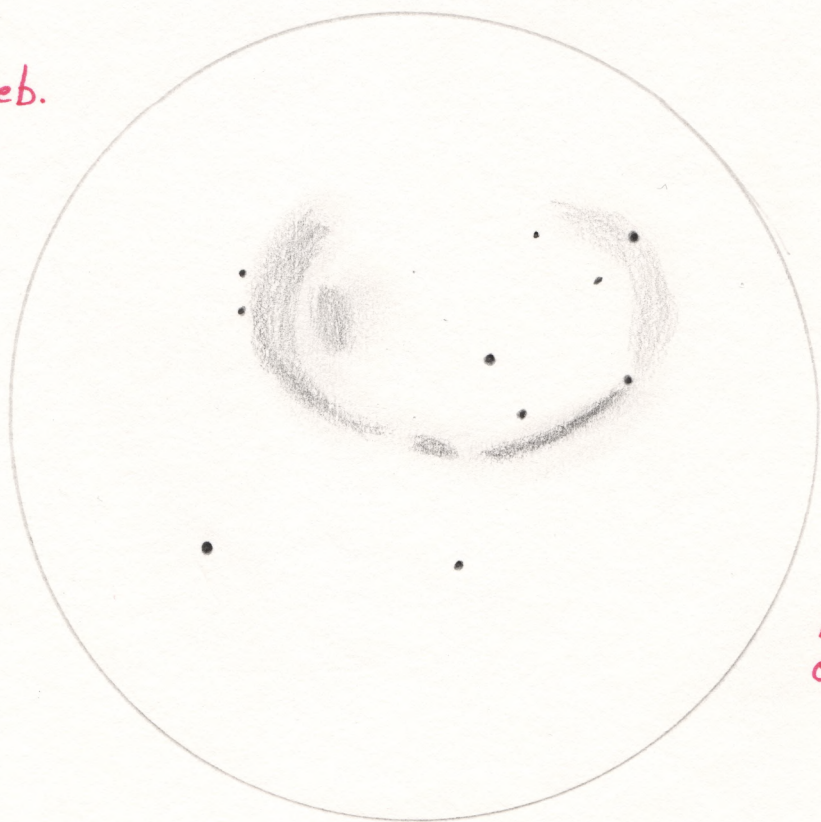
Aug 28 thurs

8:00 → 3:00

Well after pretty much a full year of poor observing due to Mount Penatubo, clouds, cold weather, and my own poor health, we finally had a fantastic night! Dark, transparent, clear and warm. It took me a while to get back into gear so much of the night was spent looking at old favorites. I found the fields for SH2 - 80, 88, and 92, but no luck.

NGC 6888

Crescent neb.



100x
o III

Sept 27 92

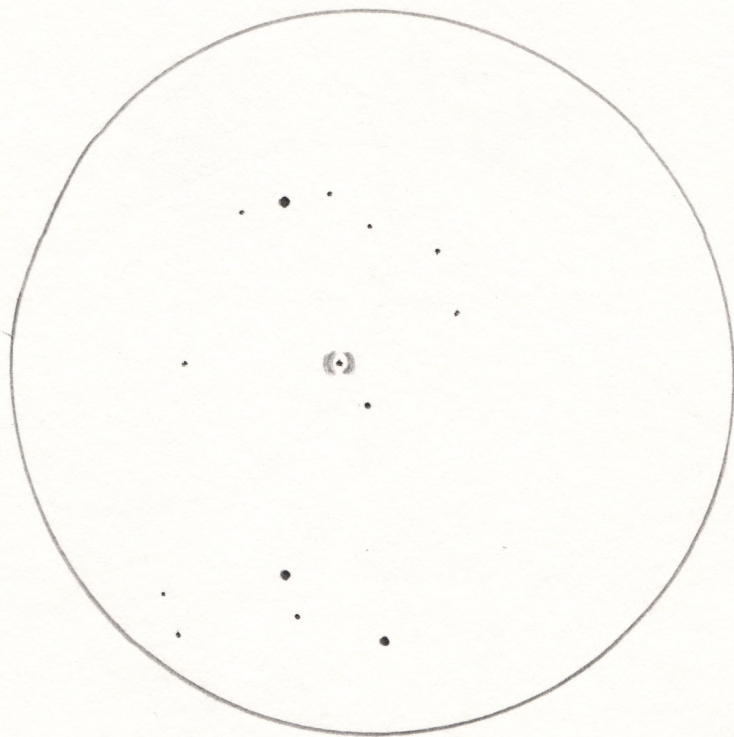
Sunday 7:00 → 12:30 +4°

A lovely night, poor seeing but good trans.
and no condensation at all.

NGC 40, a planetary neb. appeared as a
mini jones 1 only with a bright central star. D.S.
claims some can see red color but I certainly
didn't.

NGC 40

Chepeus



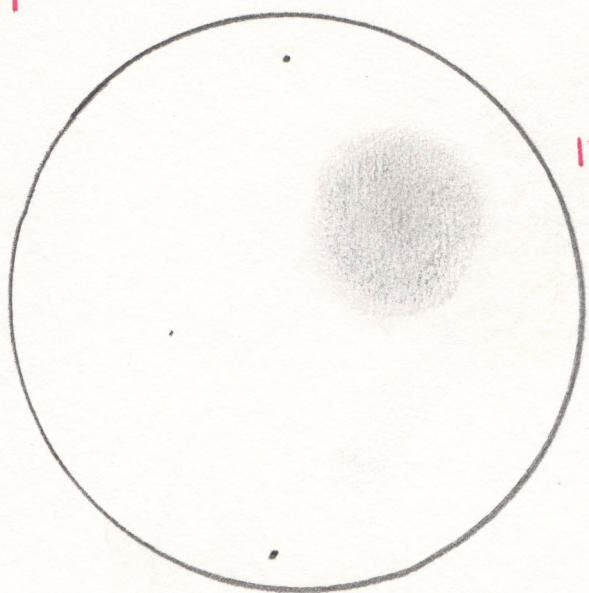
210 X

Oct 1

Comet Swift Tuttle has just been recovered (130 year cycle). My first view was from the back yard with the 16". It was invisible at all powers until I put on the swan filter. It was about 9th mag and 6 arc. min in dia. It was in Ursa Major so I was looking over the city glow.

Comet Swift Tuttle

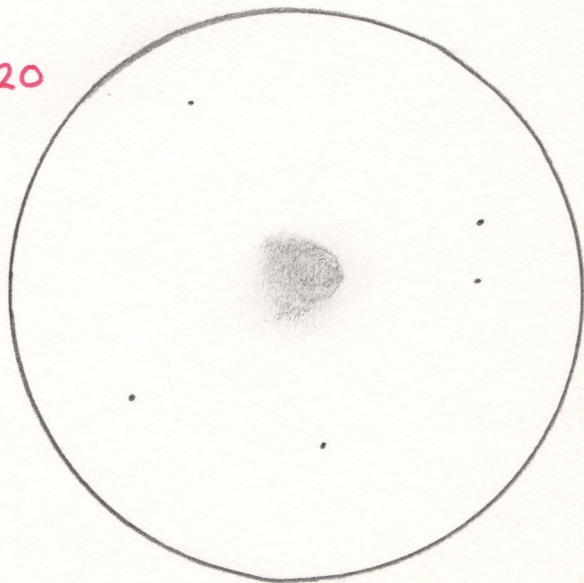
Oct 1
city



170x
swan filter
9th mag.

By Oct 20 it was 7th mag and easily seen in the 80m finder the tail was a wide soft fan shape

Oct 20
city



170x
swan
7th
mag.

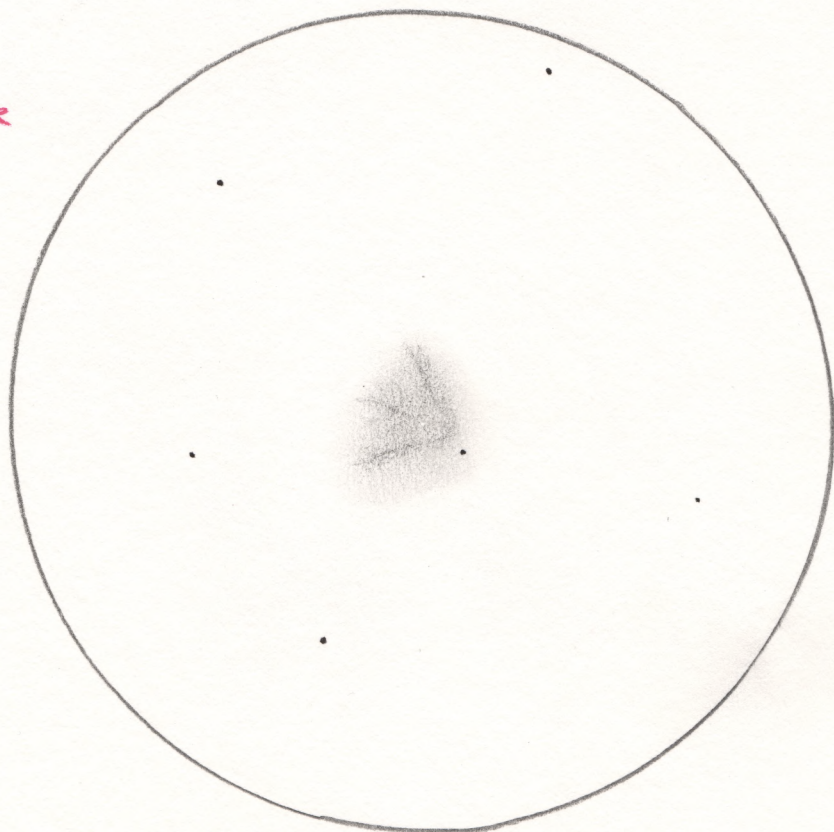
Oct 25

Blackfoot 1 +6° few clouds.

There is no snow yet and it is fairly warm (+6°) but a very biting wind goes straight through you.

The comet is now 6th mag and will soon be naked eye. with the swan filter the wide fan tail seems to have 3 spikes in it. It is easily seen in 7x50 binoculars.

Swift
Tuttle
Oct 25
6th mag.



180X
swan filter

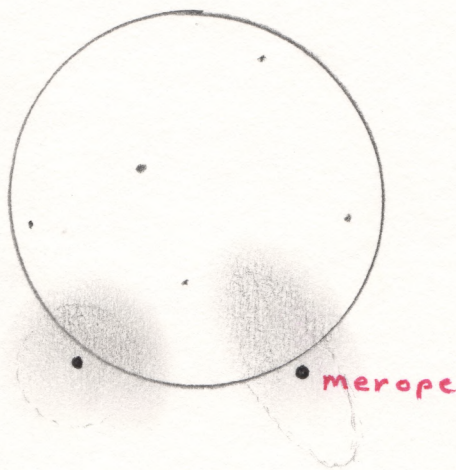
Oct 25 cont.

I have finally seen the merope neb. Actually I have seen it many times but always taken it to be flare. Alister showed us a trick to show the nebulosity. There is another bright star close to Meropes may just to the west. If you place both stars just outside the field you will see that the flare off of Merope is definitely elongated rather than round compared to the westerly star. This elongation is the merope nebula!

Pleiades

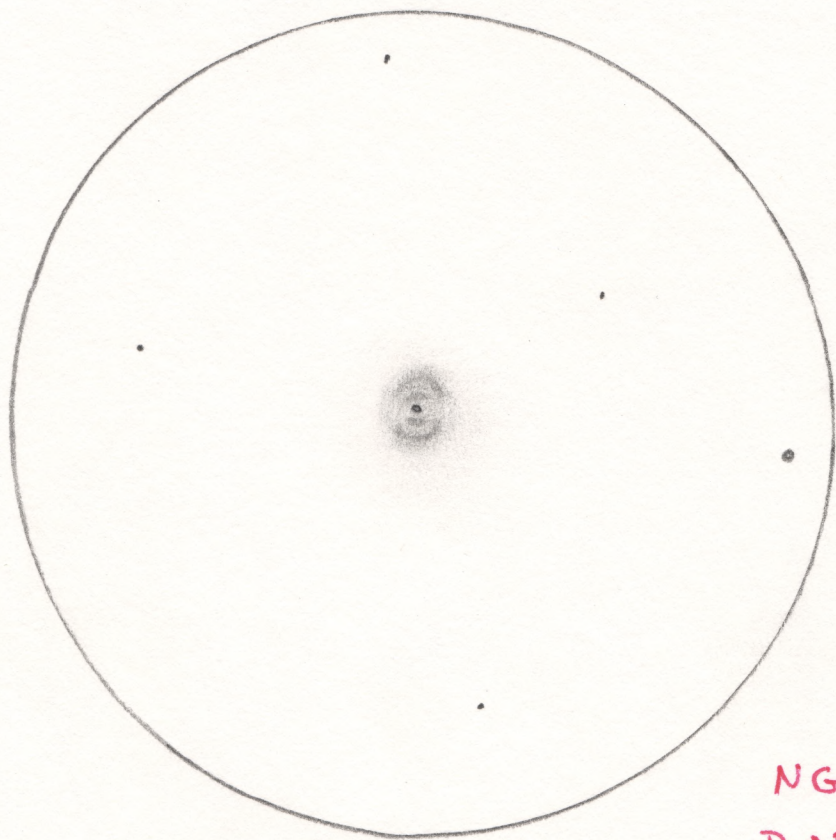
• • •

↑
merope



Oct 25 cont

NGC 1514 is a very odd P.N. in Perseus.
:it has a bright central star and a Double
outer ring. But the rings are elongated and
overlapping with one considerably brighter
than the other. Very strange!

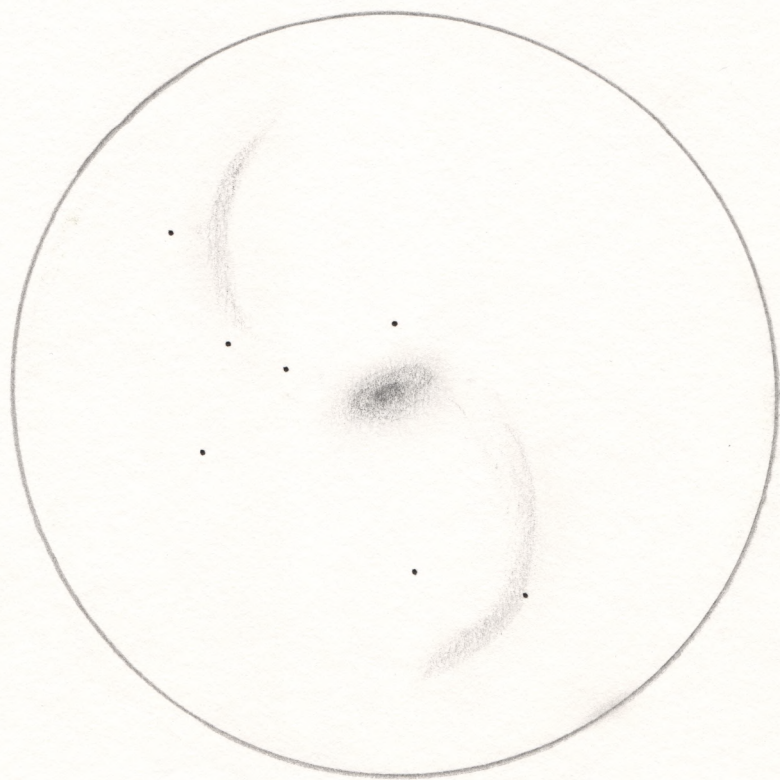


220X
0 III

NGC 1514
P.N
Perseus

Oct 28

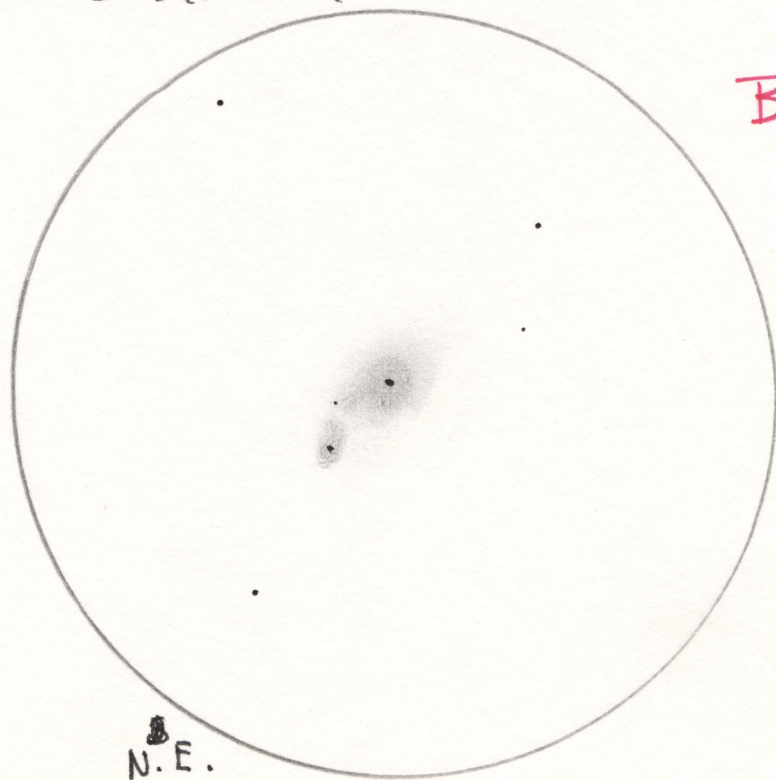
Left my scope at home and went out with Drew to use his 20". The night wasn't the best, we had some kind of very high thin cloud but the milky way still showed well and some objects were great. For the first time I saw bits of the arms of M81. They were so far out from the nucleus that I never looked so far out for them before.



Oct 28 cont.

Blackfoot +2° no snow

The Boomerang nebula in Perseus is a faint bright ~~neb.~~ that I have looked for many times and I finally found it tonight. At low power it shows as a flare around a star but at 200x you can make out the "Boomerang". It is nebulosity around 2 faint (18 mag?) stars. It was a challenge in Bob's 20". The nebulosity is brighter around the outer star than the closer one.



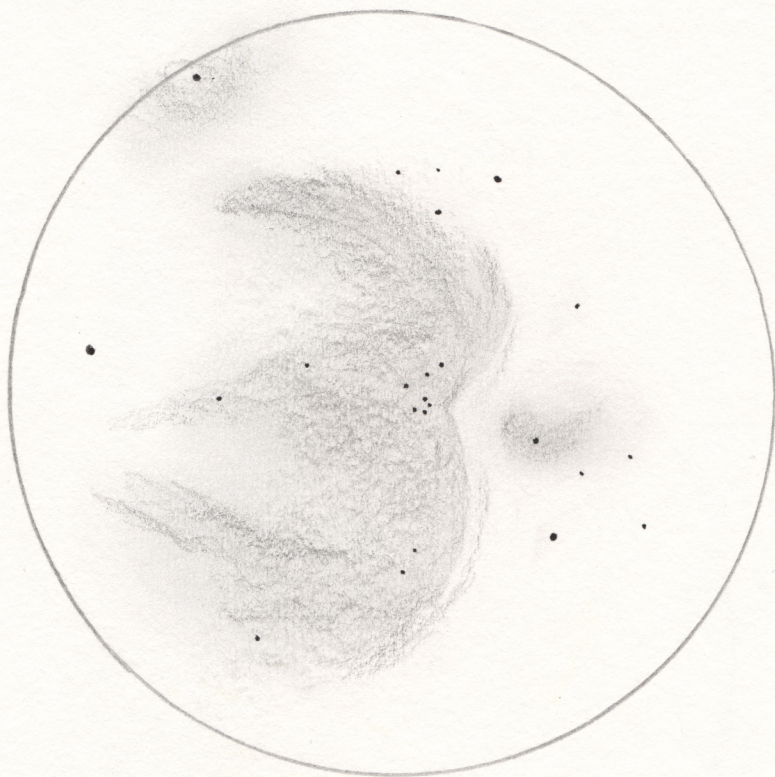
Boomerang
Nebula
(reflection)
9' x 7'
mag 10.5
central
star

NGC 1333 Perseus

200x 20"

Oct 28 cont.

M 42 looks very different in the OIII and H beta filters, you could spend an hour on just this one object. This sketch is with no filter.

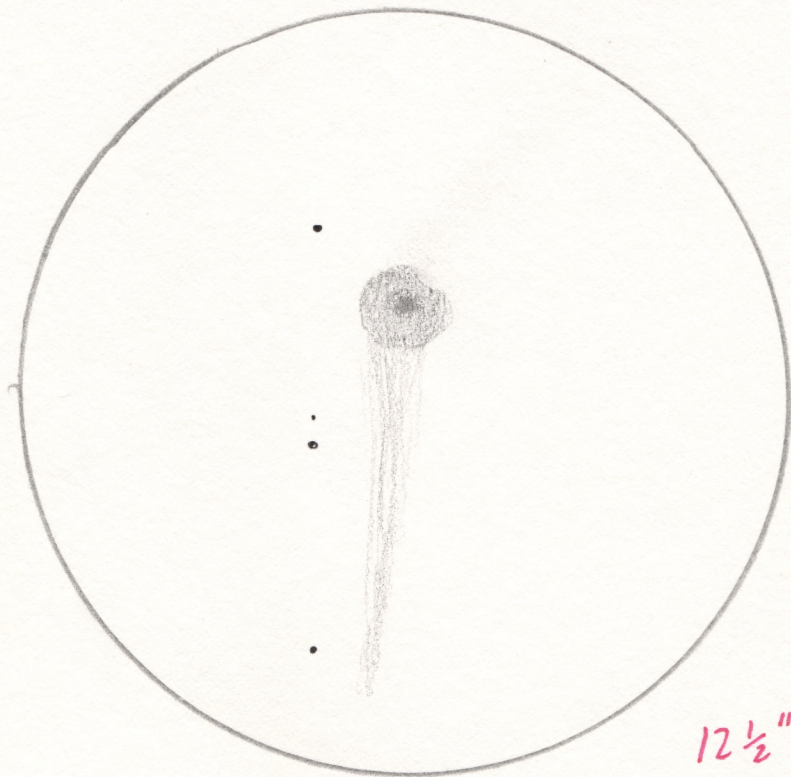


M 42

Nov 15 92

Comet Swift Tuttle is now in Hercules and moving fast we won't be able to follow it much longer. At 6th mag it can be swept up with pretty much anything. The fan tail is now encircling the nucleus and the comet has a long very faint tail. It has a notch in it at 1:00.

Swift Tuttle



12 1/2"

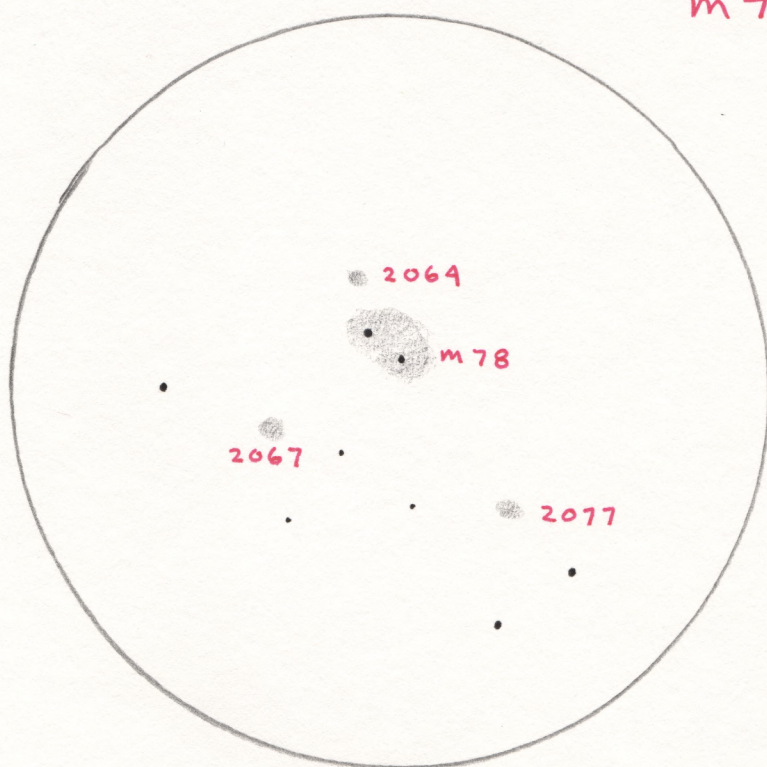
70x

Jan 22

December was cloudy and minus 30 all month, so was most of Jan. But we did get one good night at -12.

Berry came out with his new spectroscopic eyepiece and it works great!

Deep sky objects were not too good but I did manage to get the 3 planetaries beside M78 in Orion.



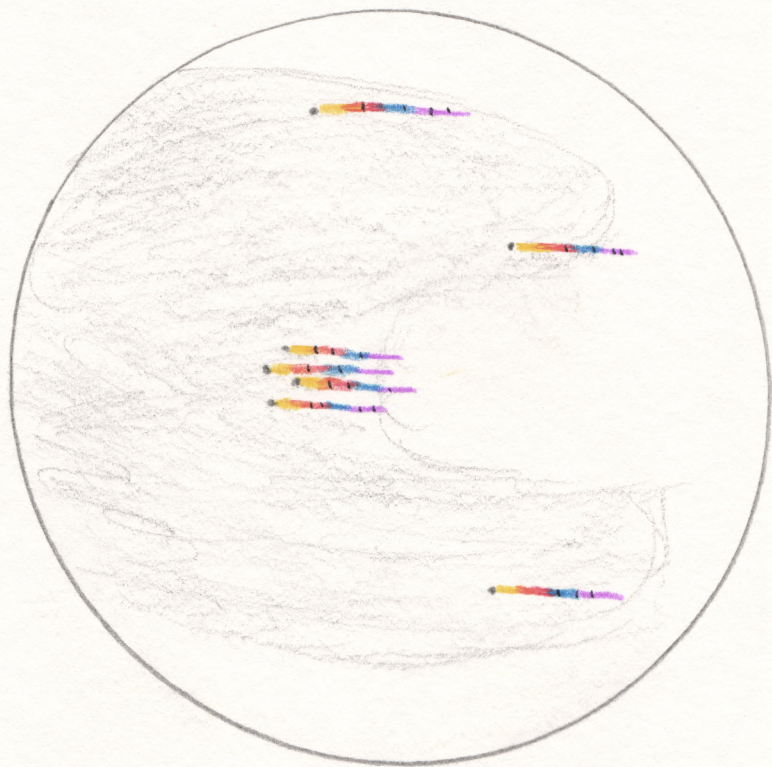
M78 and 3 planetaries

Orion

160 X

Jan 22 cont.

Berry's spectroscopic eyepiece.



400 x
Trapezium

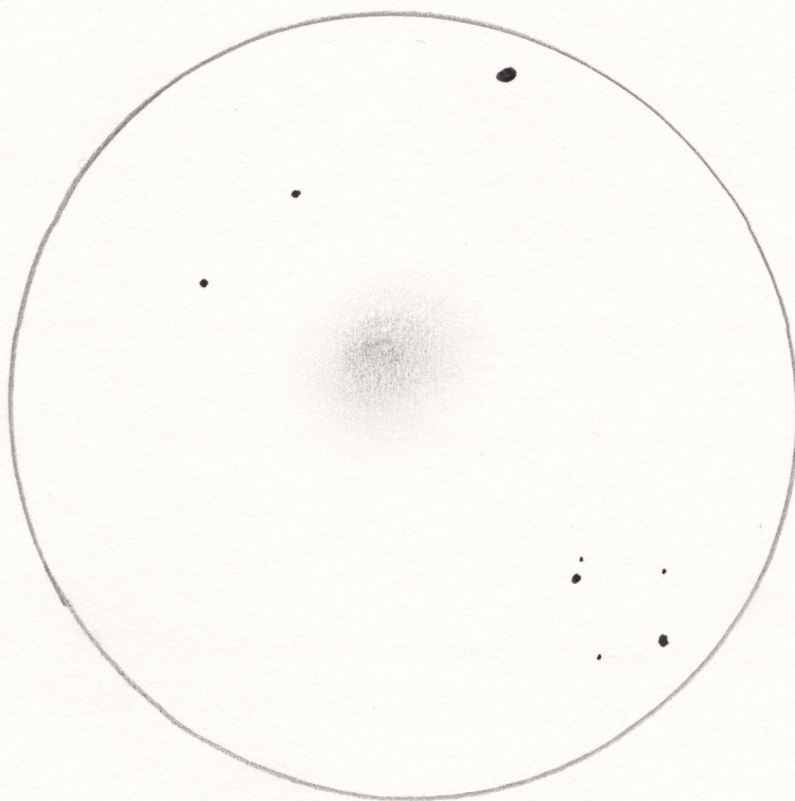
The nebulosity showed well too, the fishes mouth was well defined.

Feb. 8 '93

A new periodic comet to look at. Comet Schau Masse. Not too easy right now, at mag. 9.5 and about 2 arc min. it is quite a challenge from my backyard. But the moon is full.

comet Schau Masse

Perseus



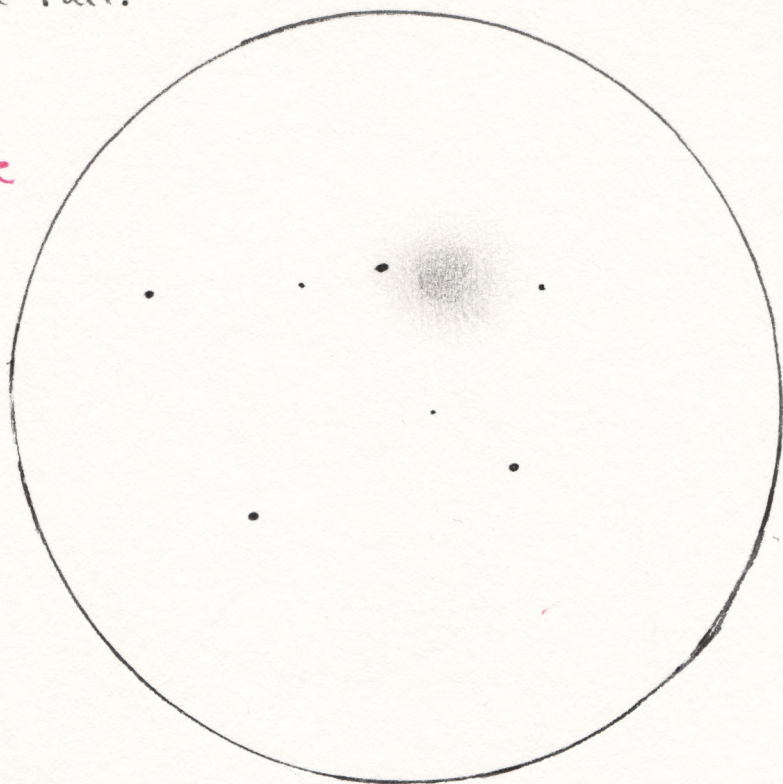
100X

It is just about to pass in front of the California nebula.

March 20


The comet is now about 10 mag. and diffused,
no sign of a tail.

Comet
Schaumasse




100X

May 14 The spectrums of Vega and Arcturus in
Barry's spectroscopic eyepiece.



Vega thick wide absorption lines



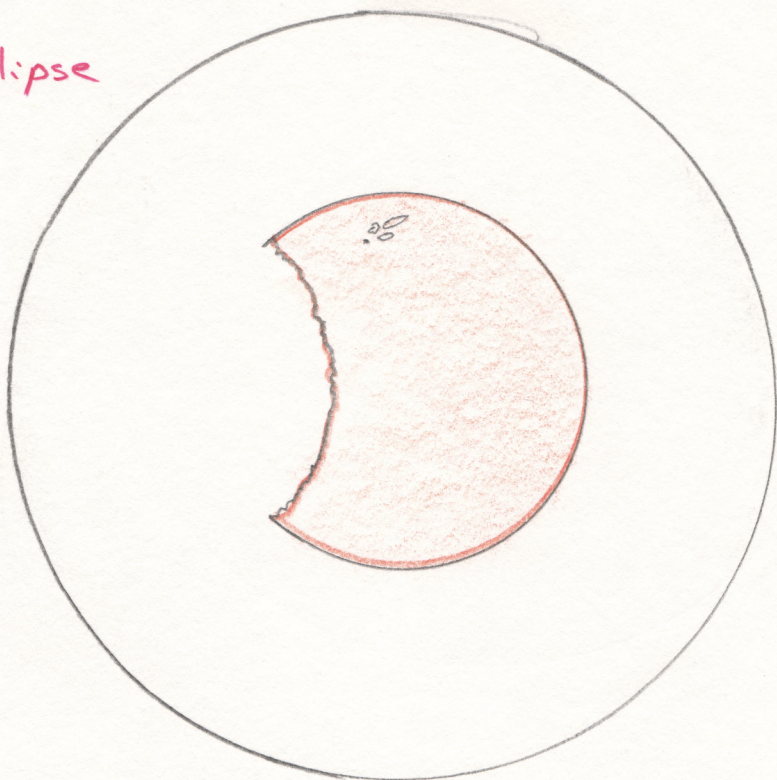
Arcturus very thin lines—dozens of them!

April
93

May 21

Partial solar eclipse. Viewed with
Murray's Brandon. At 50x

Solar Eclipse



7:20 A.M.
May 21

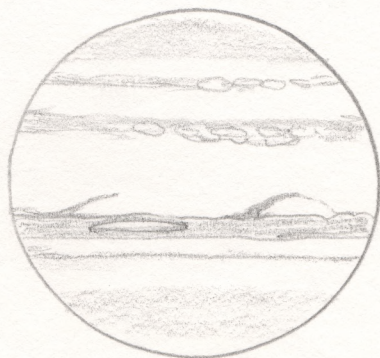
50x

- Note the uneven shadow, it is the mountains and craters.
- small sunspot group towards the top of the disc.

June 6

7 230x

11:00



The seeing was not very good but yet you could glimpse several ovals in both the S temp. and S equ. Belts. Also a long white streak in the N Equ Belt.

Aug 11/12

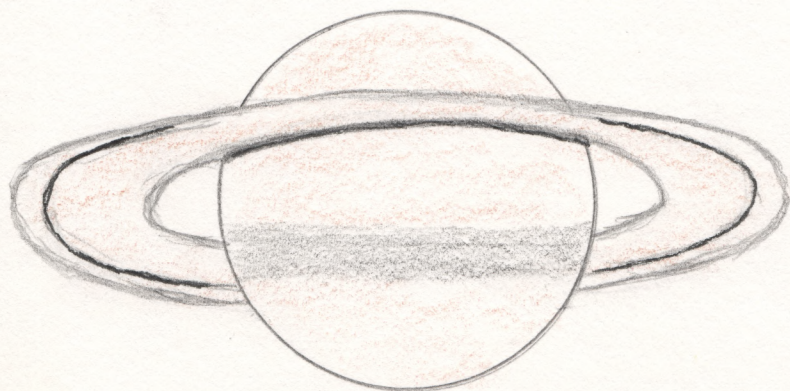
The 93/94 season started out great with an excellent perseid meteor shower. Nicole and I went out from midnight to 3 a.m. along with a dozen members. Cole logged 107 meteors. It was a great night! The 92/93 year was the pits with the penatubo dust and cloud. I hope this year will be much better.

Aug 21

12:30

330 X

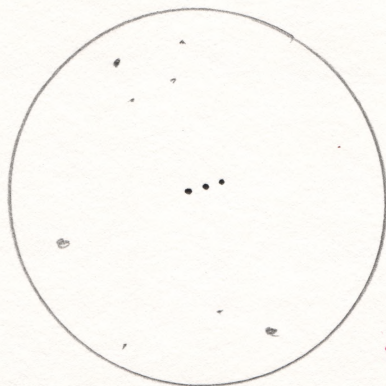
saturn was great!



Cassini's ring was crisp and black, the ring shadow on the disc was a thin clean line giving a 3D effect. The Band on the Disc is much wider than past years.

Aug 21

A beautiful triple star, or 3 in a line, in
Cepheus.



All 3 stars are exactly the
same mag. and spacing between
them the same!

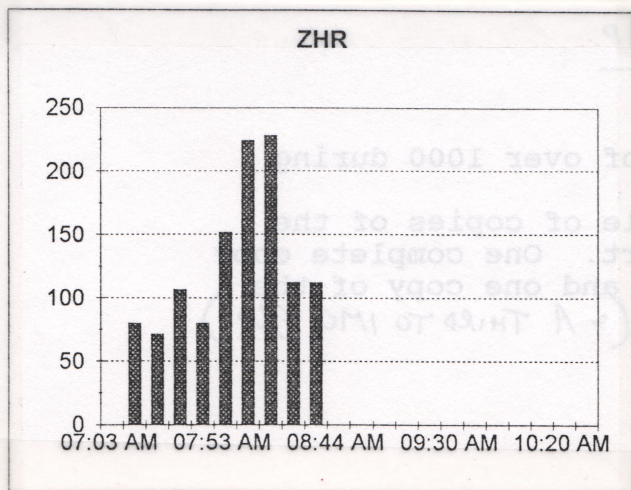
The Perseids: 1993

Observer: Pakan, Nicole

Location: Waskahegan, Alberta, 53.5N, 112.9W

Date: August 12, 1993 (UT)

Time (UT)	Lim. Mag. (approx)	Cloud Cover	Breaks (min)	Perseids	Non-Per.	ZHR	Comments
07:03 AM						0	
07:13 AM	6.0	0.00	0	9	0	80	Limiting mag. was not provided,
07:23 AM	6.0	0.00	0	8	0	71	but her youthful eyes were far more sensiti
07:33 AM	6.0	0.00	0	12	0	107	then our older eyes.
07:43 AM	6.0	0.00	0	9	0	80	
07:53 AM	6.0	0.55	0	11	0	152	No attempt was
08:04 AM	6.0	0.80	0	14	0	224	made to distinguish between Perseid and
08:14 AM	6.0	0.60	0	16	0	228	non-Perseid meteors.
08:24 AM	6.0	0.80	0	7	0	112	
08:34 AM	6.0	0.80	0	7	0	112	



Sept 17

* Buck Mountain * * * * *

8 hours of fantastic observing! 9pm → 6am.
Seeing so so, but transparency was excellent!
Got 7 palomars the Horse head and much more.
Low of +3 and no condensation at all.

This was the Best night ever to date.

Pal 9



Sgr.

m 9.2

3.9' dia

10 hr. 55 min

-22° 42'

pg 340 urano

35 Sgr.

✓
confirmed.

180X

very easy!

Pal 8

Sgr. by M25

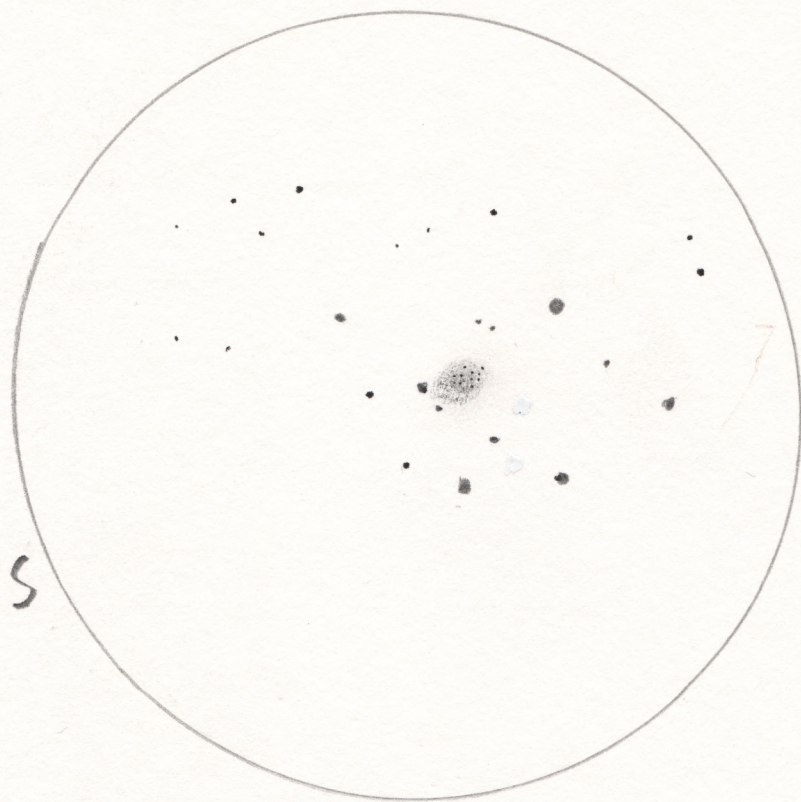
11.2 m

4.7'

18 hr. 40 m

-19° 49'

pg 340 urano

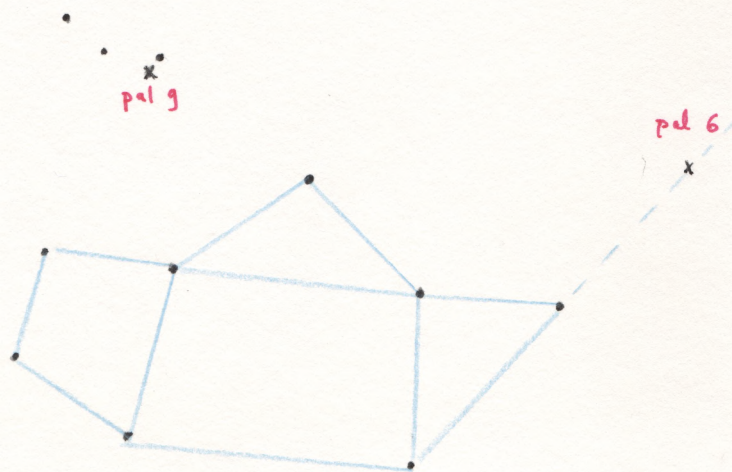


✓ confirmed
with the
CCD
Atlas

180x

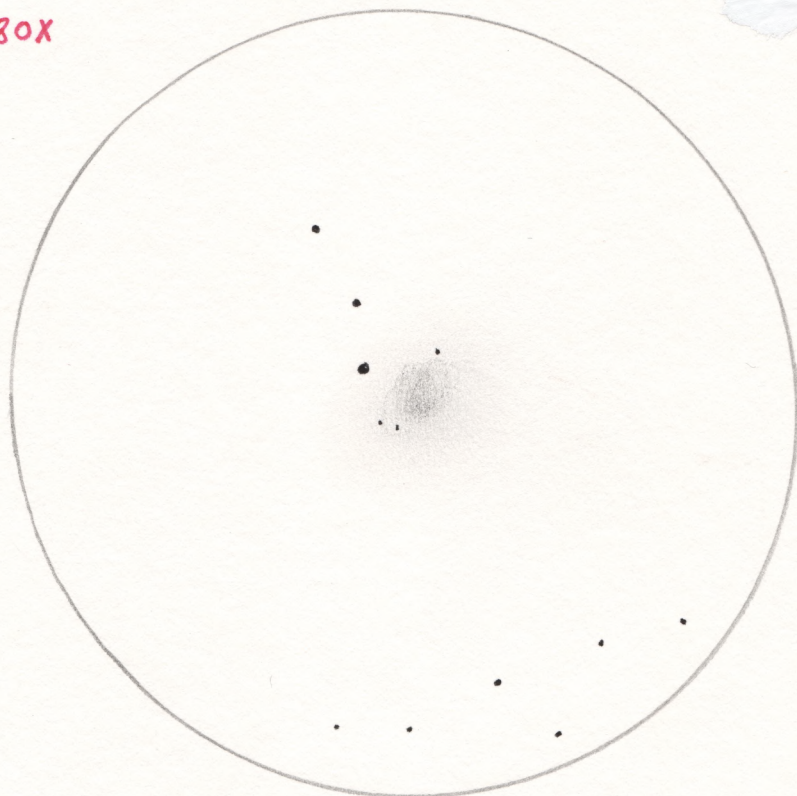
the cluster was just starting to resolve
into pin point stars.

x pal 8



Pal 6

180X



Sgr.
m 14.6
7.2' dia.

17hr. 43m
-26° 13m

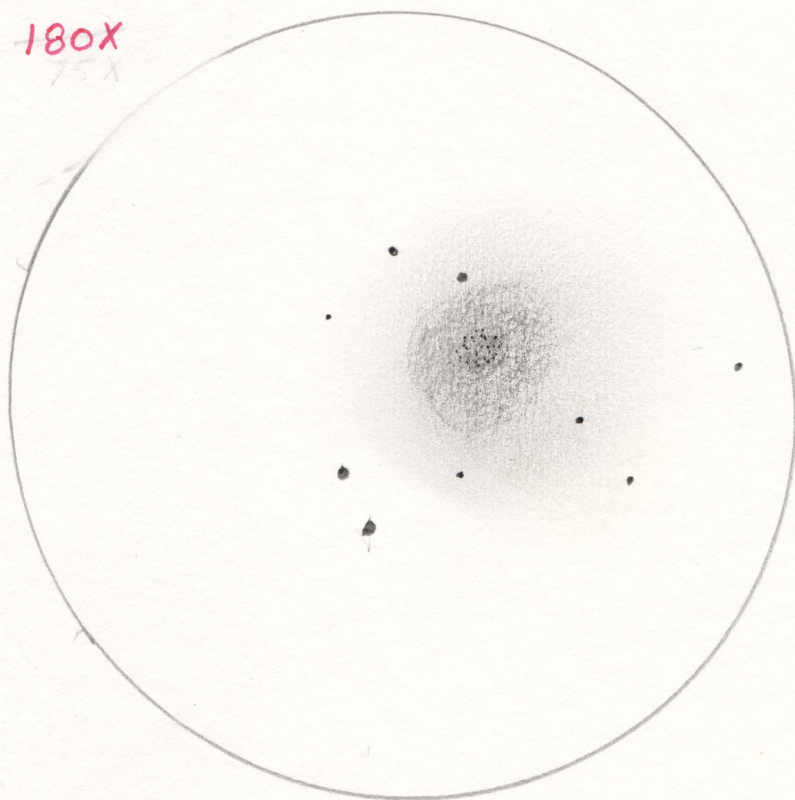
Very poor seeing

faint and unresolved, quite
hard to find because it is so low.

Pal 7

✓ confirmed.
with D.S. #22

180X
75X



scutum/Serpens

m 10.3

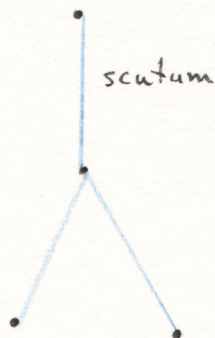
7.1'

18h. 10'

7° 12'

pg 294 urano

Resolved into faint peppering.



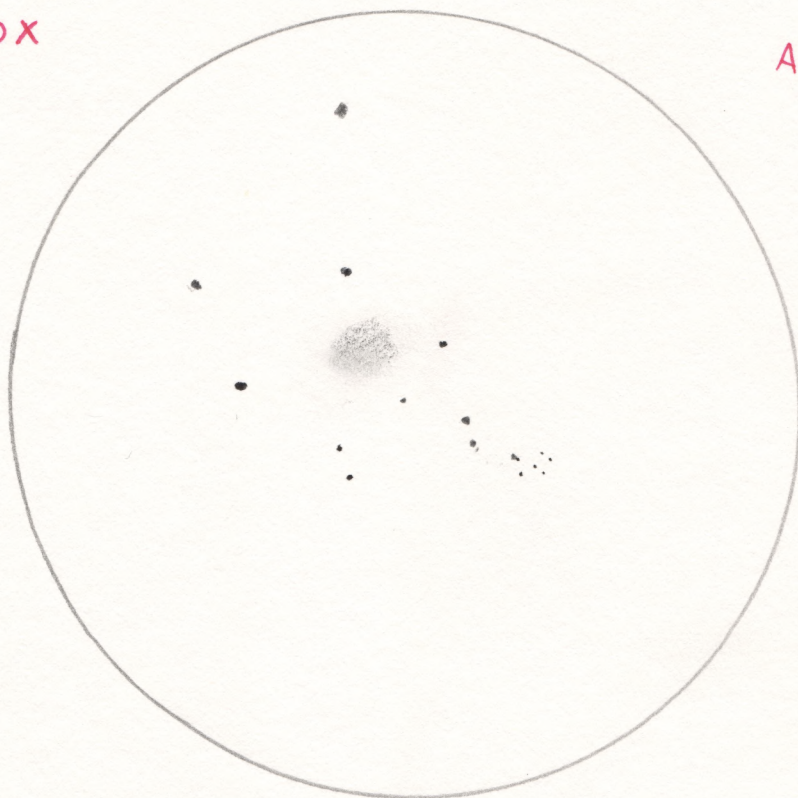
x pal 7

Pal II



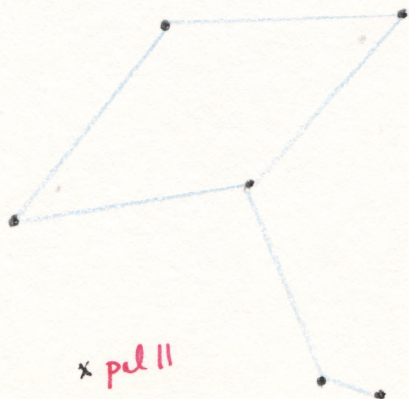
confirmed
with the CCD
Atlas.

180X



Aquila
9.8 m
3.2'
19h. 45'
-8° 02'
pg 297 atlas

A very hard object, in a good high location
and easy to find the field. But extremely
hard to see. No resolving.

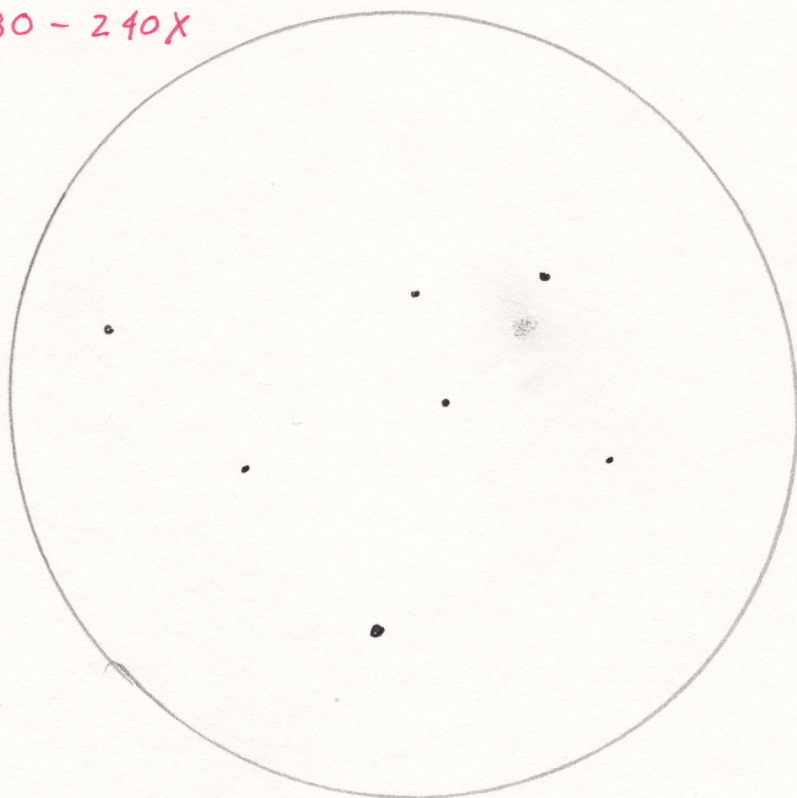


x pal II

Pal 13

✓ confirmed.
by David Lane's
CCD camera.

180 - 240X



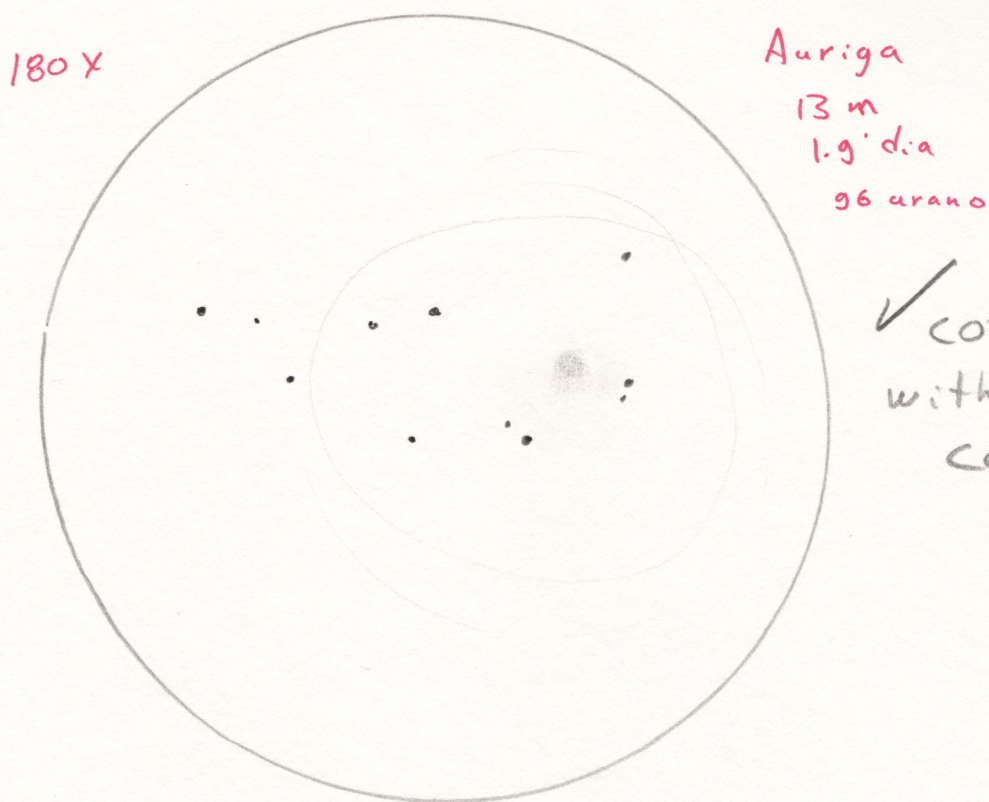
Peg.
13.8 m
1.8' dia
Pg 213 urano

Extremely hard, and the transparency was excellent!



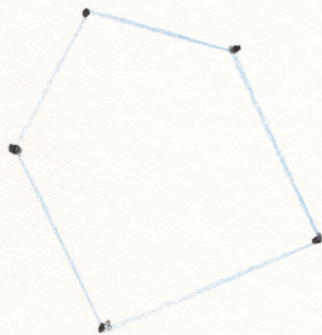
x pal 13

Pal 2



✓ confirmed
with the
CCD
Atlas.

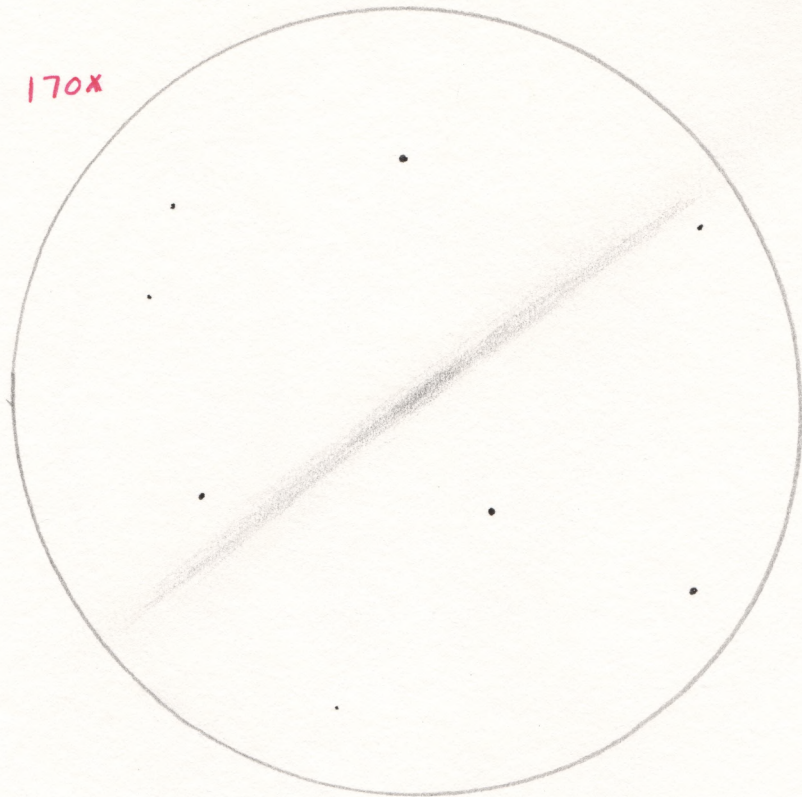
Most of the palomars tonight have been
very hard, and the trans. is excellent!



x pal 2

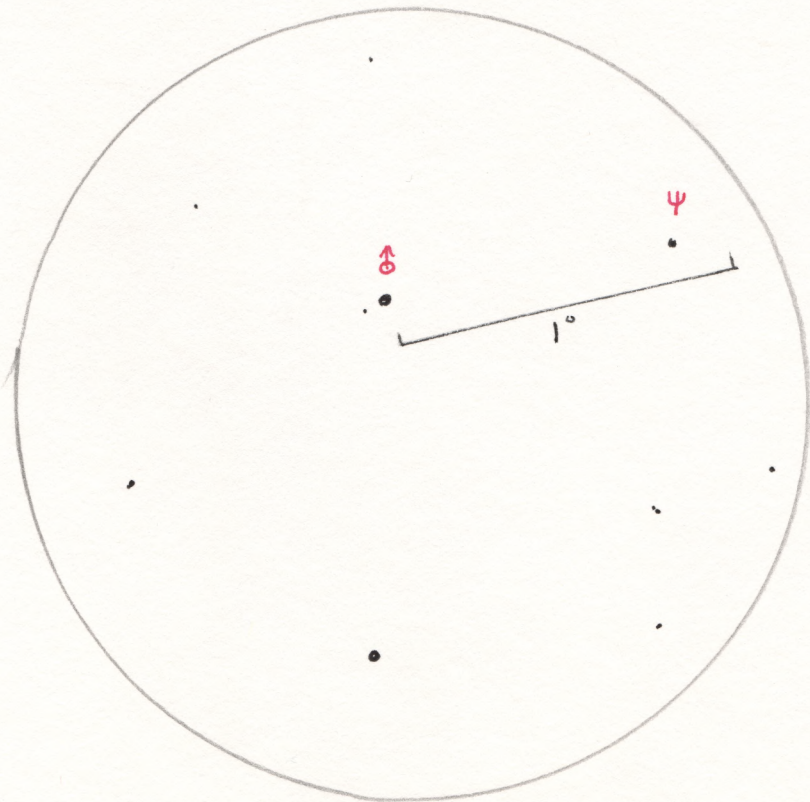
NGC 5107

170x



11' edge on in
ursa major

Bright Nucleus.



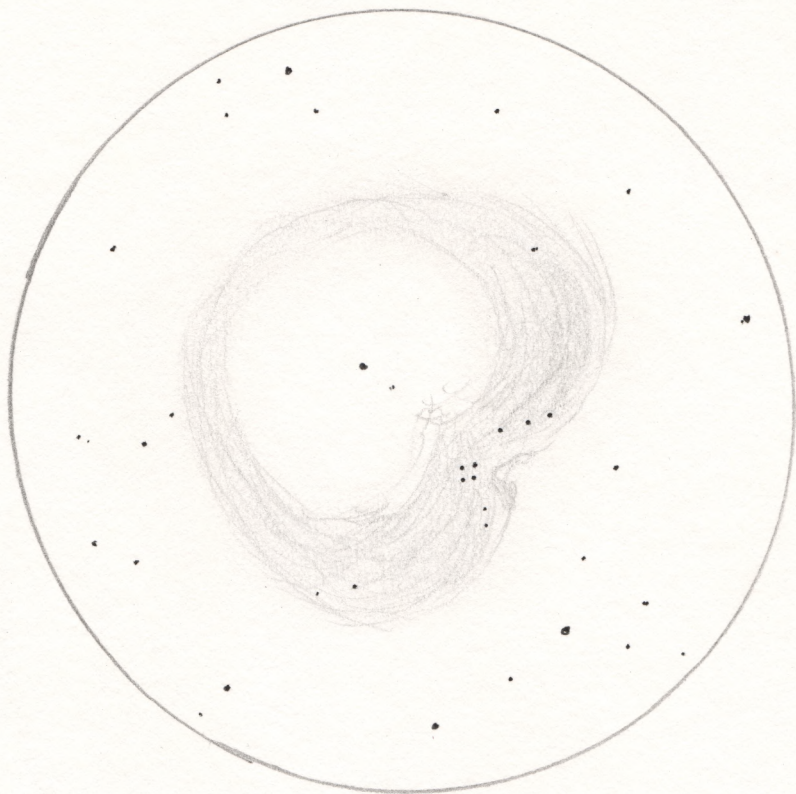
172 years until
the next one!

conjunction of Neptune and Uranus.

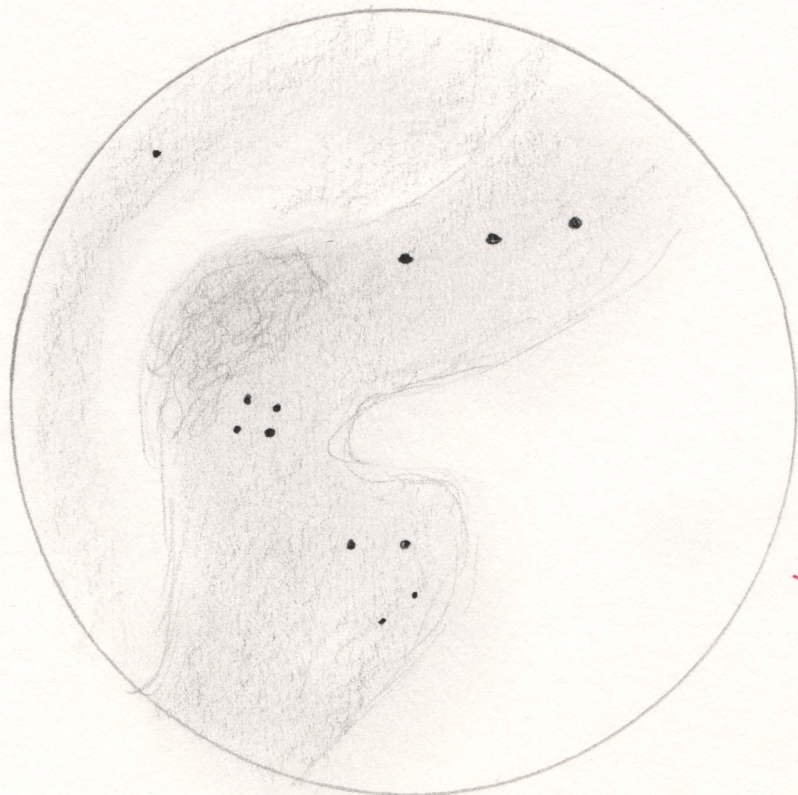
M 42

50x

OIII



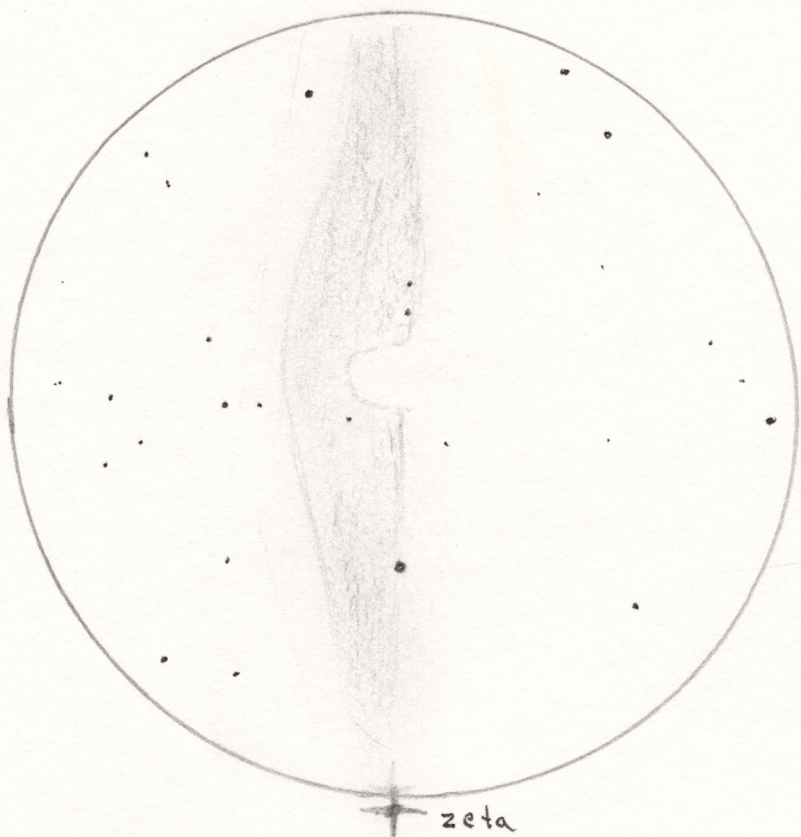
with the OIII
the "horns" loop
around and join.



The fish mouth
at 250x
has a lot of
texture, almost
3D. A lot
of filaments
above left of
the trapezium.

Horse head.

16" 100X H Beta

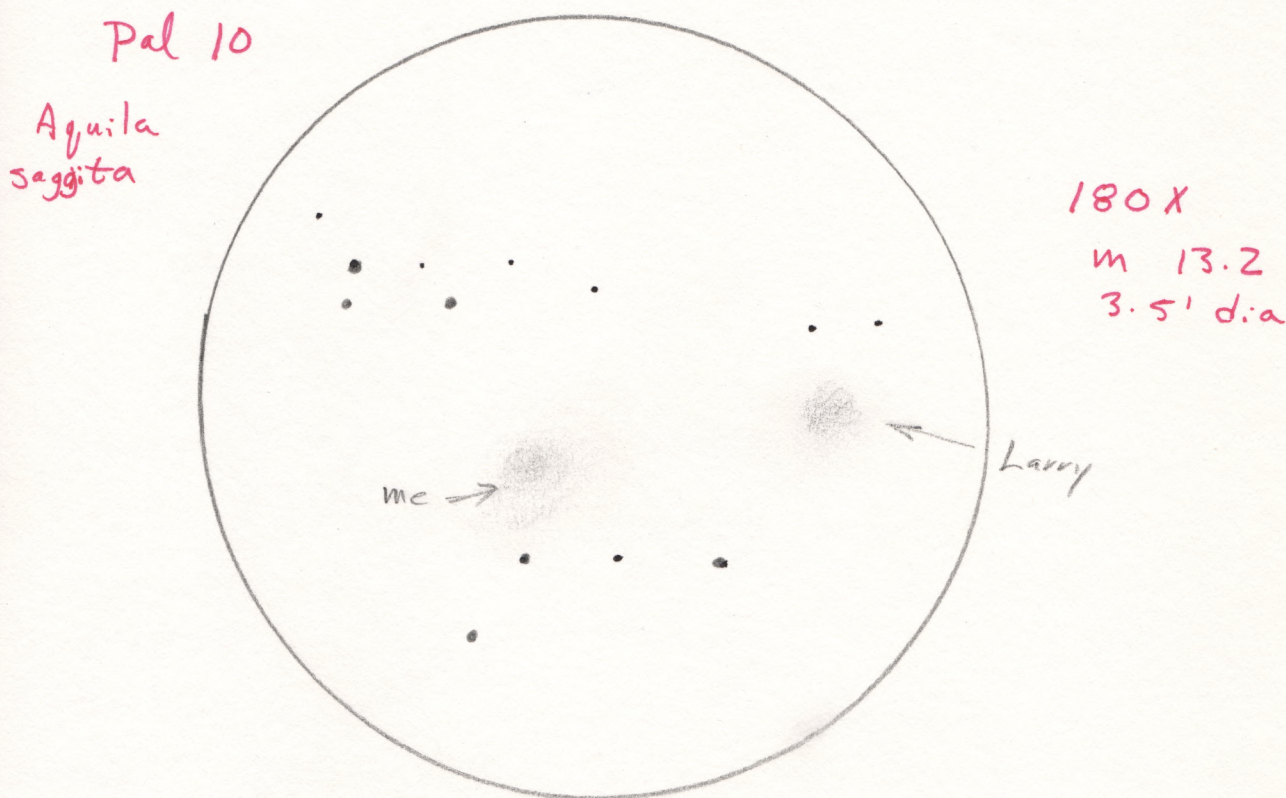


I first needed averted vision to pick it up, but after you get oriented you can very easily see it. Very easy in Bob's 20". We also saw it in all the 12's.

This "Back to Back" trip was the best observing session to date. Sept 17 1993.

Sept 20

Black foot Monday night, low of zero,
lots of Dew!

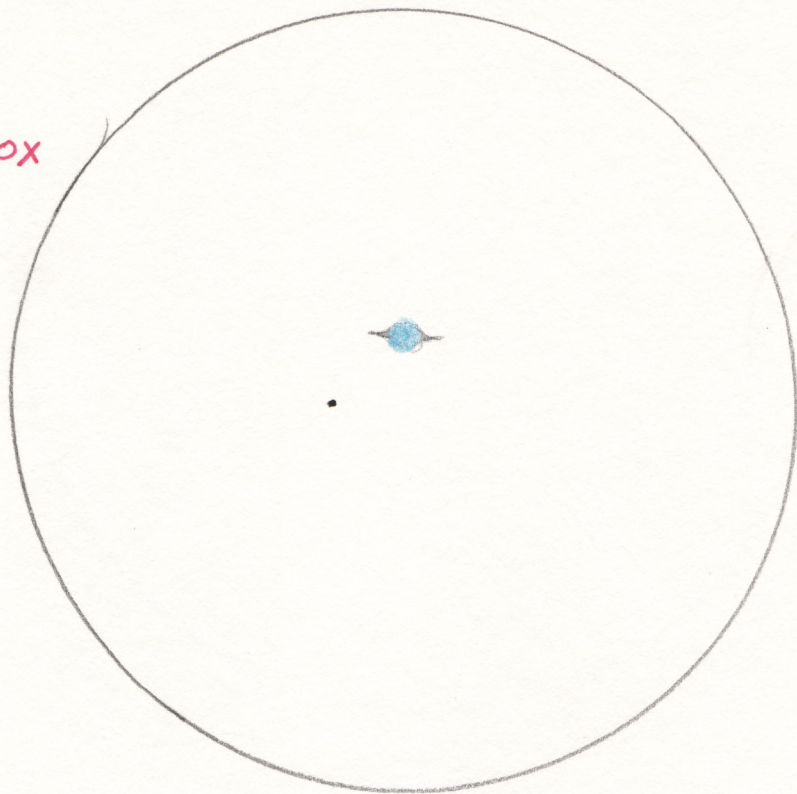


This needs a second look, Larry and I
disagreed as to which object is the cluster.

✓
confirmed with the
CCD Atlas.

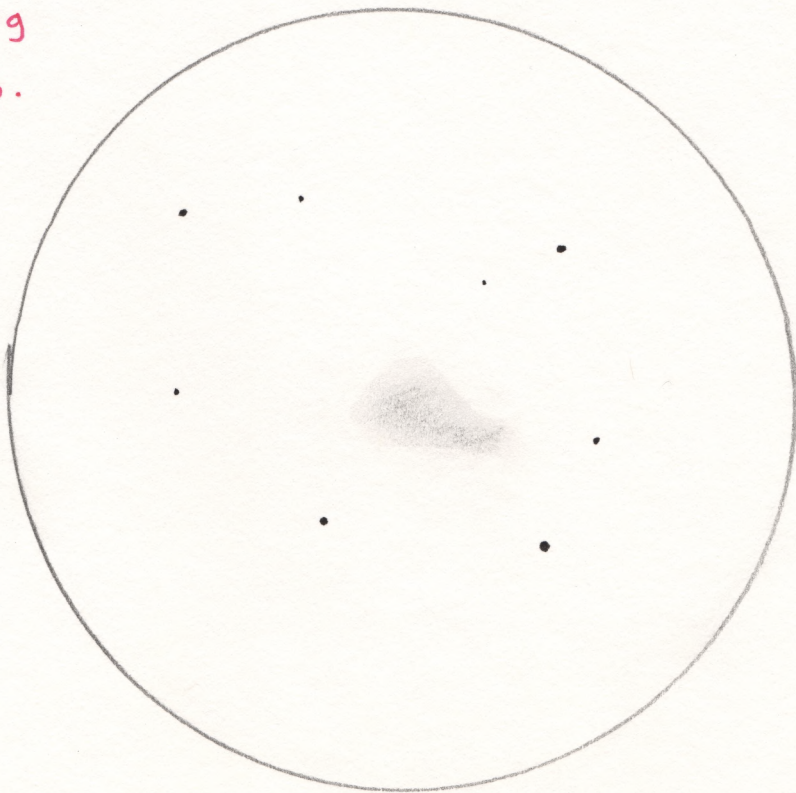
7009
Saturn Neb.

420X



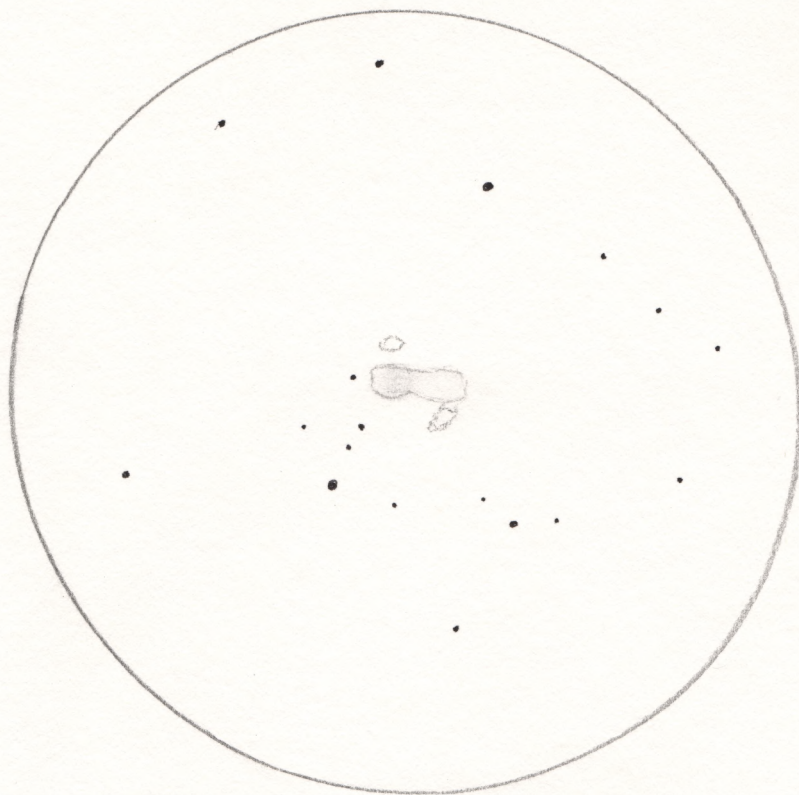
Very Blue
Averted vision
showed the wings
nicely.

NGC 1579
Diffuse neb.
Perseus



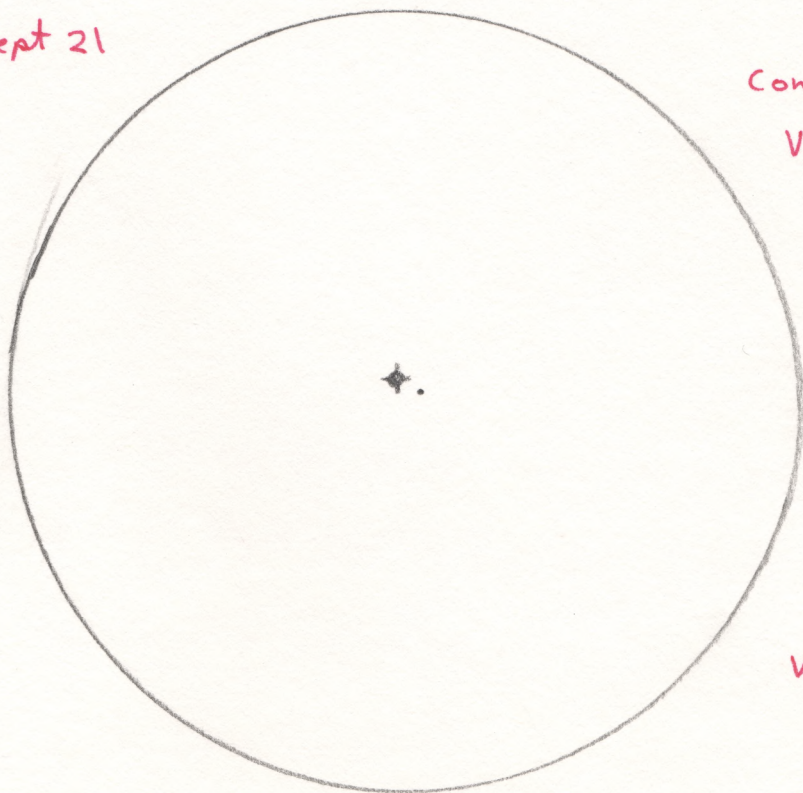
180X
swan filter
- very odd shape
- extremely diffuse
- faint.

M 76



220X
I could just
start to make
out the 2 side
pieces of
nebulosity.
Must Re-see.

5 A.m. Sept 21



Conjunction of
Venus and Regulus

Very
striking!

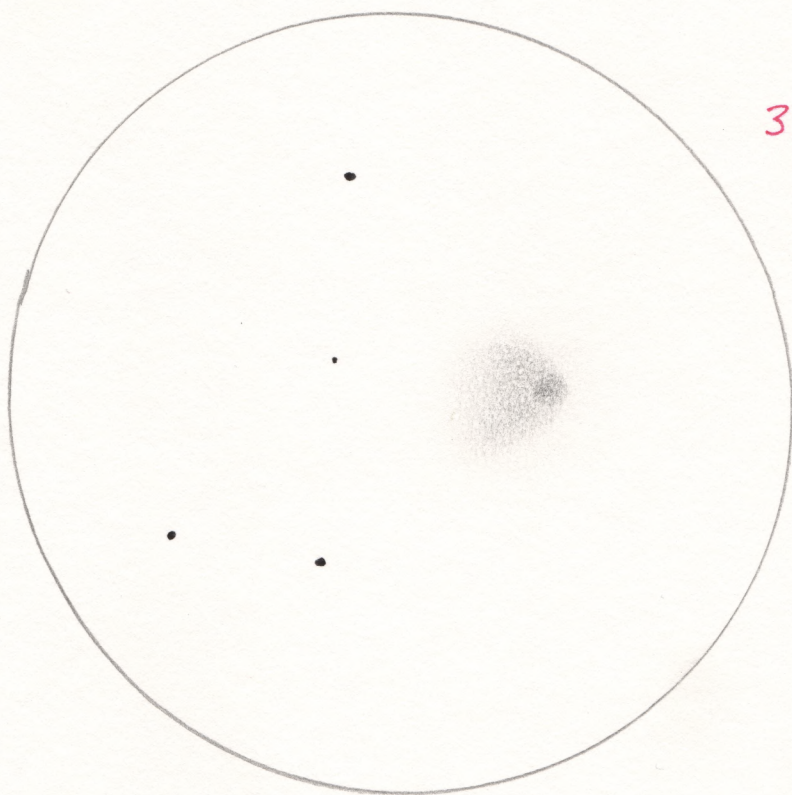
Oct 8

Blackfoot temp 0°

Dark by 8:00 and northern lights by 11:30, but the 3½ hours we did get were excellent.

A new Comet.

Mueller



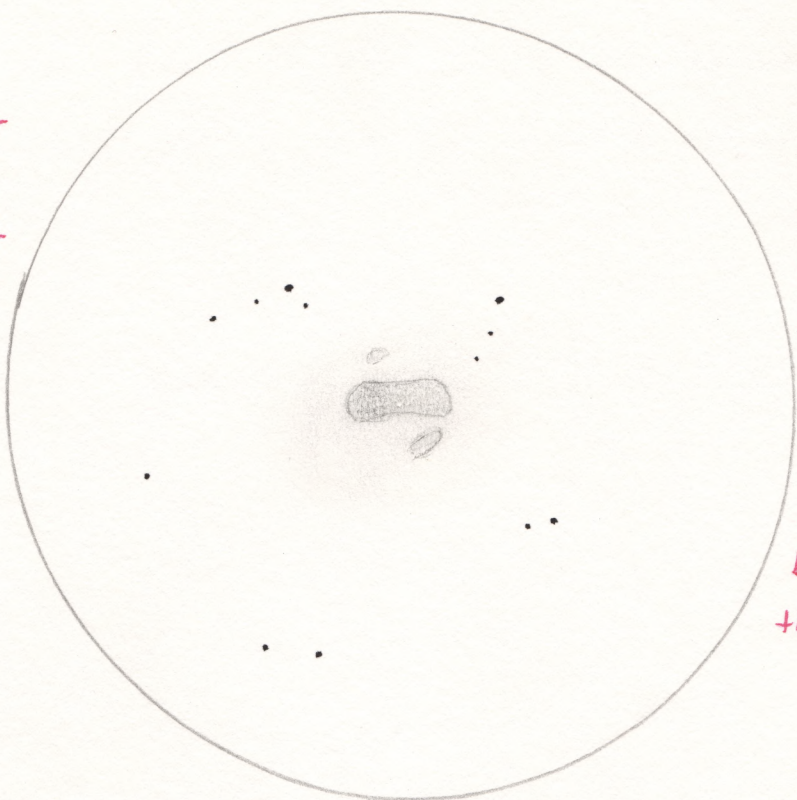
330x

A large fan and
a bright nucleus.

It was only supposed to be May 10 → 11 so I wasn't sure if I should even look for it yet, but it was more like 9-9.5. I could easily see it in my finderscope. It is to become much brighter yet.

M 76

The OIII filter worked but made the field too dark. The Swan was better than no filter, but not that good. The UHC was the best.



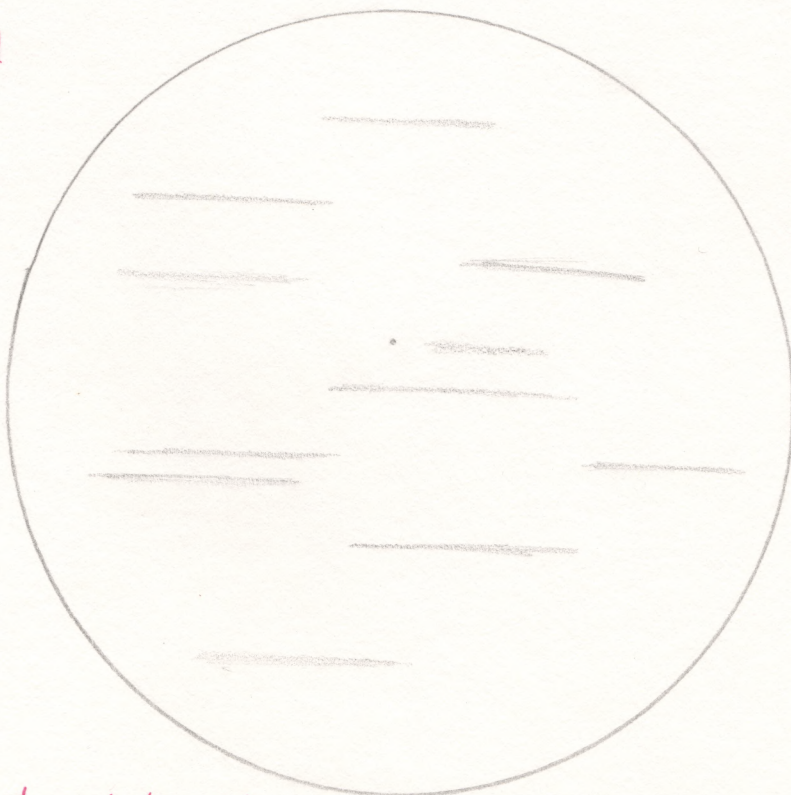
330X

The two bits of neb. were best seen with averted vision. The left P.N. was brighter than the right one. The right bit of neb was brighter & larger than the top left one.

NGC 6881

Cygnus

P.N. 13 mag
4 arc sec.



20 crtle with the 2X spectroscope yields 200X.

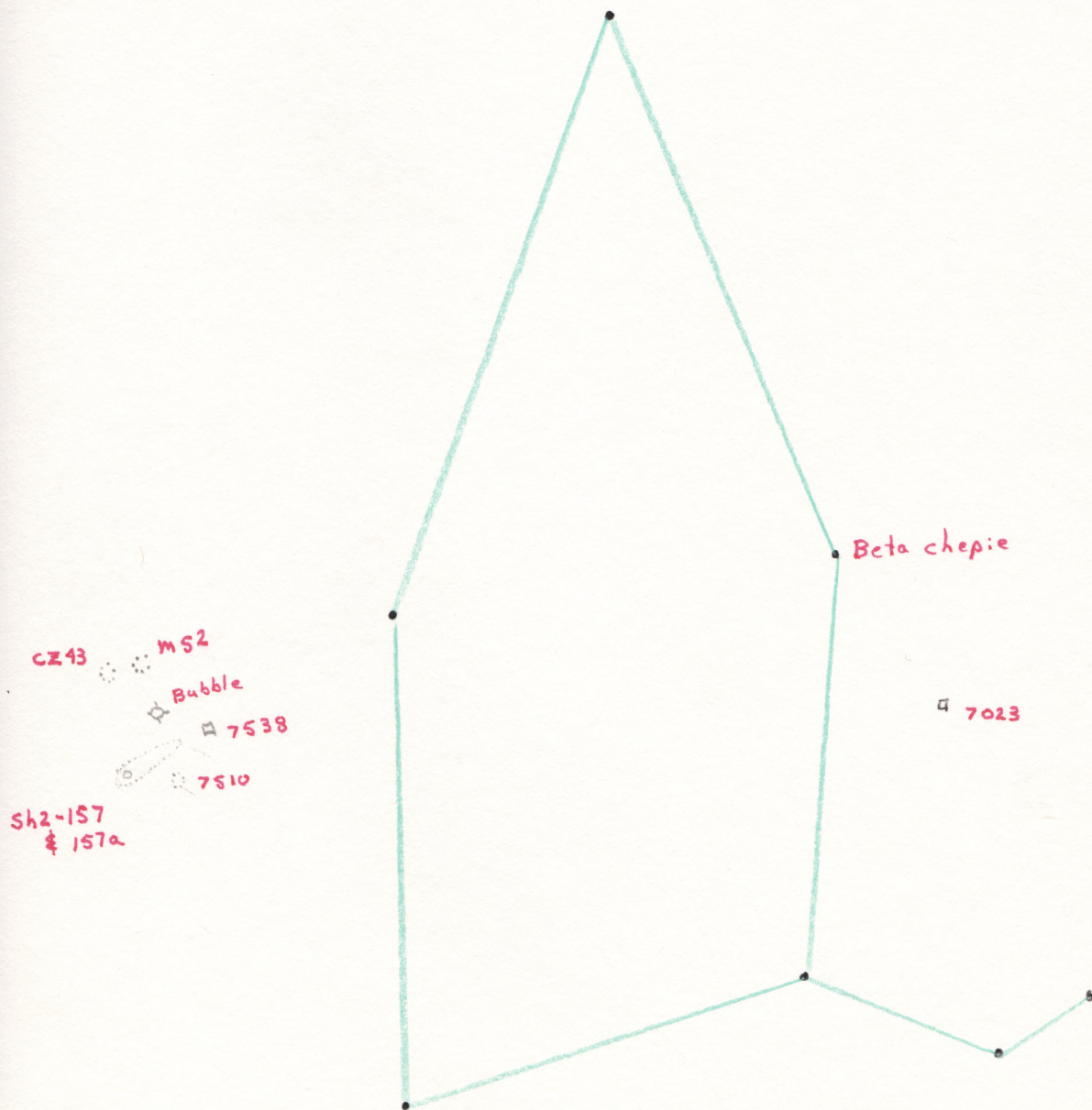
Just a pin prick of light.

You must rotate the spectroscope because the P.N. can be hidden behind the streak.

Oct 9

Another excellent night! low of $\approx +1^\circ$ and no dew or frost at all! Very transparent from 8:00 until 2:30 when the moon came up.

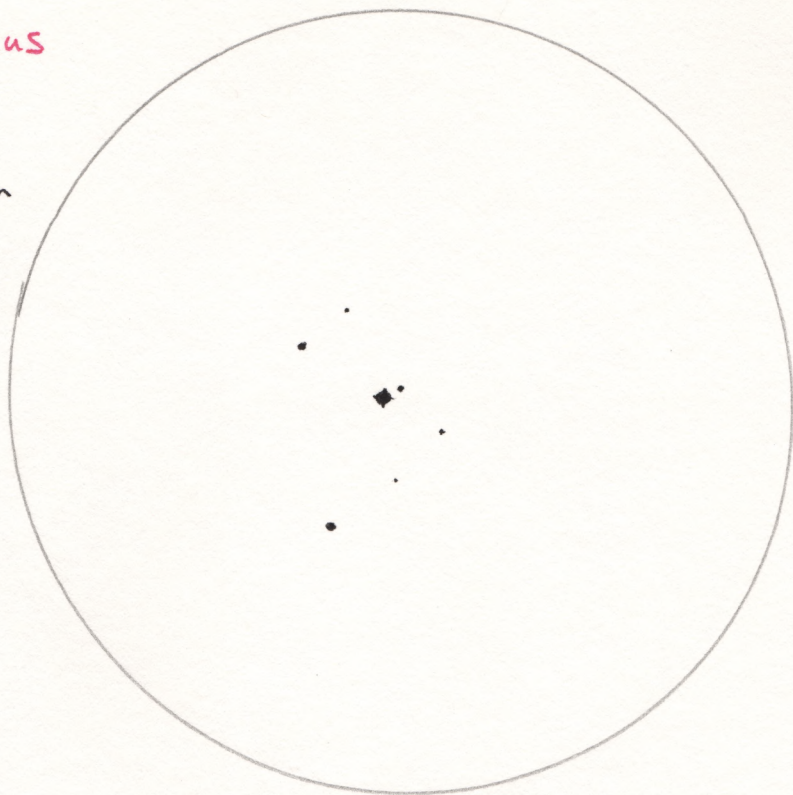
A night of Cepheus objects.



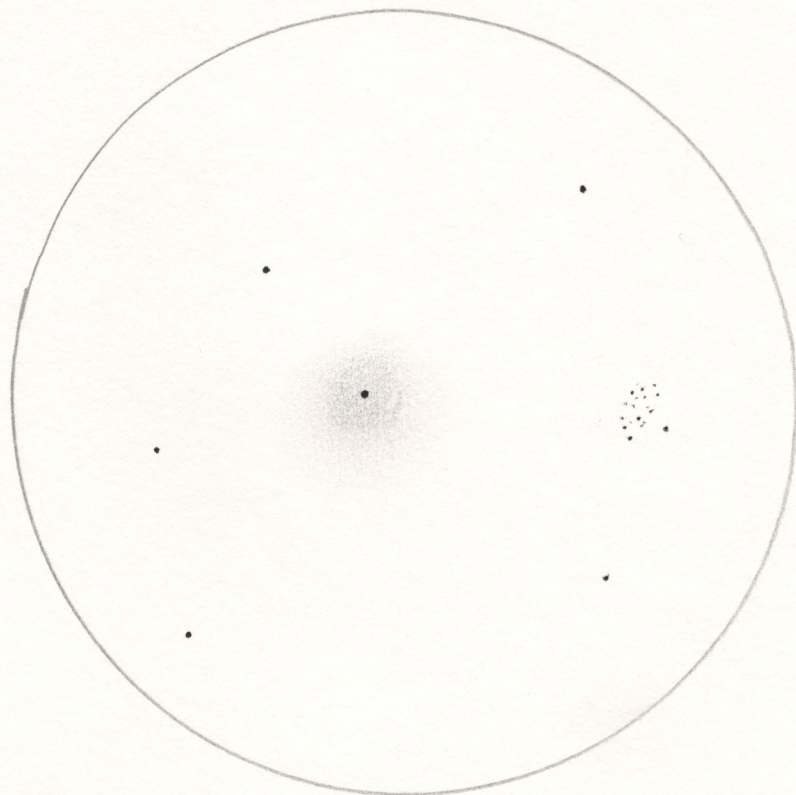
Beta Cepheus

Beta is a giant
beside it's companion
double. It was very
similar to the recent
Venus Regulus
conjunction.

180X



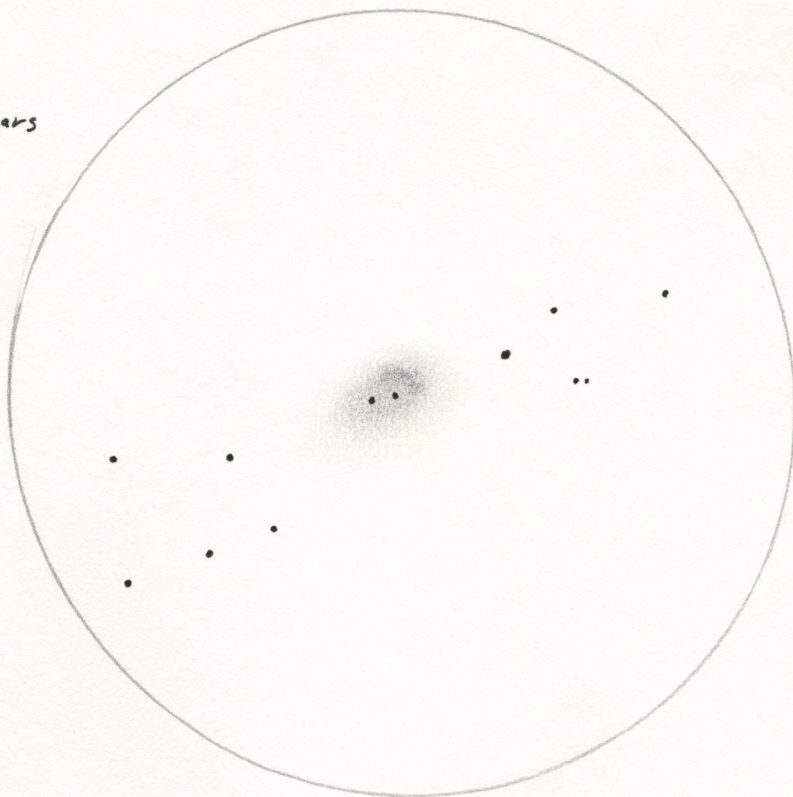
NGC 7023 Neb.
cluster is also
named 7023 in
Deep sky guide to
Uranus.



NGC 7538

emission neb.

Two 11 mag stars
embedded in a
neb. They look
like eyes looking
back at you.



160X

E Neb.

O III

9' x 6'

11 mag stars.

The Bubble

NGC 7635

160X is a nice
power, it shows
the neb nicely
but also includes
another star of
the same mag.
for comparison



160X

O III

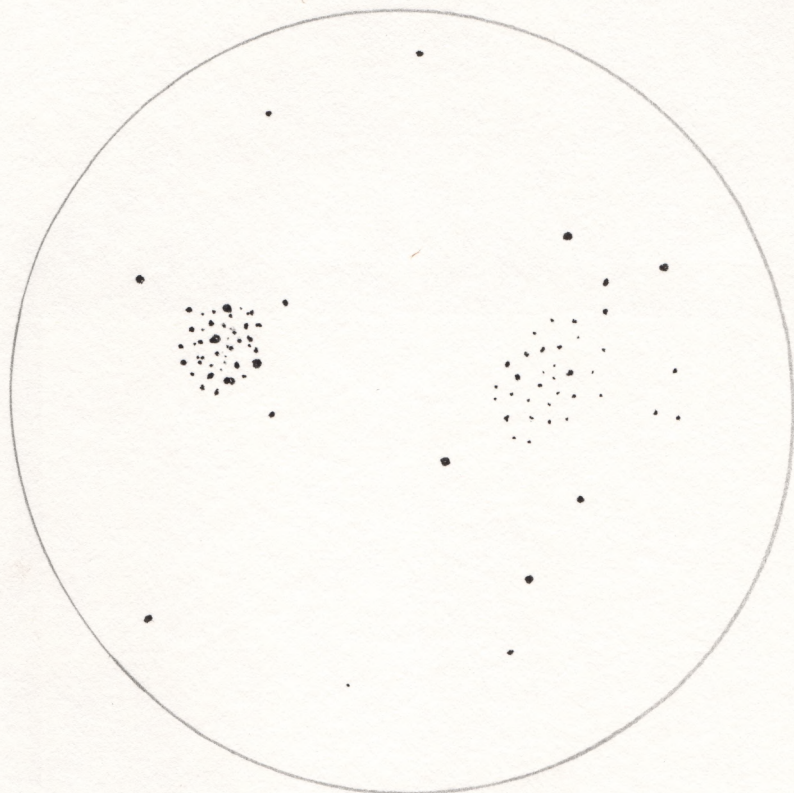
E neb.

photo Britus

1-5

15' by 8'

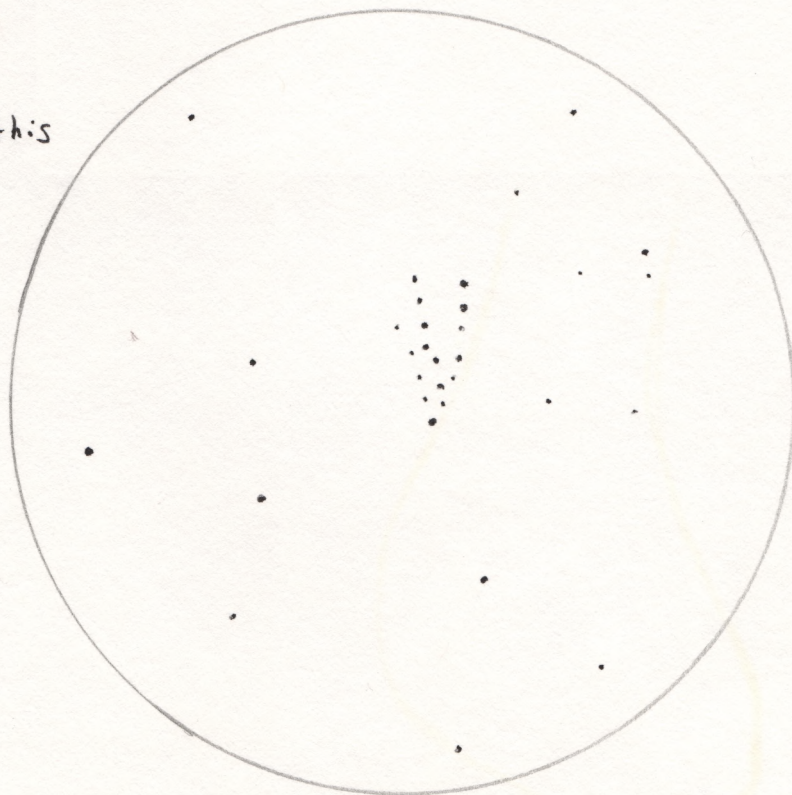
M 52
and
CZ 43



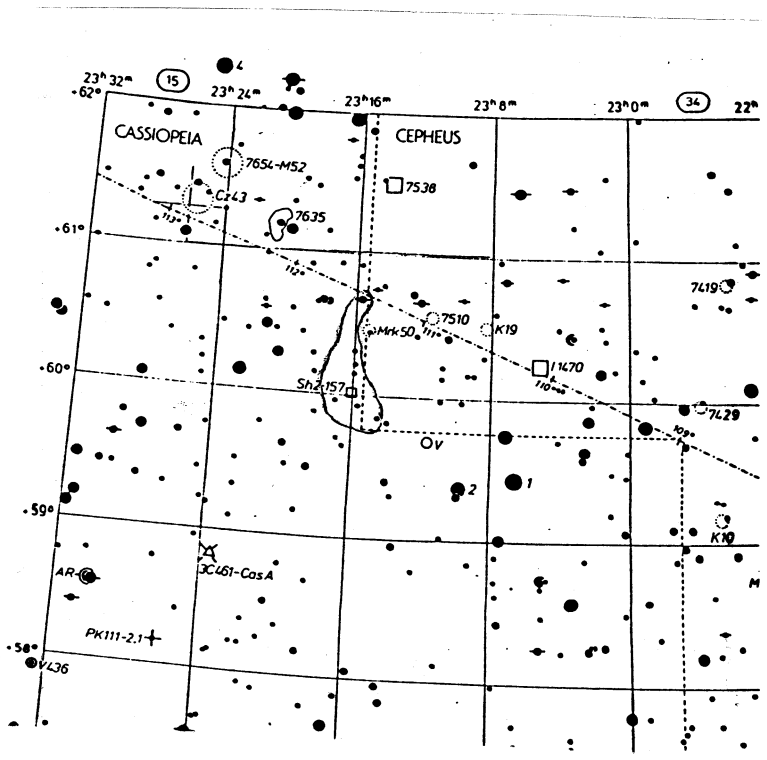
50x
40 mm eyepiece

CZ 43 has
only about 2 doz
stars.

NGC 7510
comet cluster
is what I call this
at low power it
looks like a tail
on a comet.



240x



52

NGC 7635
Bubble

NGC 7538



N7510

On page 58 urano sh2-157a is only 3' by 2' but
the large portion 157 extends up to 1.5° . 157a is
rated at 1-5 photo Brtns.



sh2-157 This nebulosity extends 1.5 degrees and
I think it extends much farther yet! By this time
the Aurora had picked up momentarily, yet this neb.
was easily seen. (Redo on a better night).

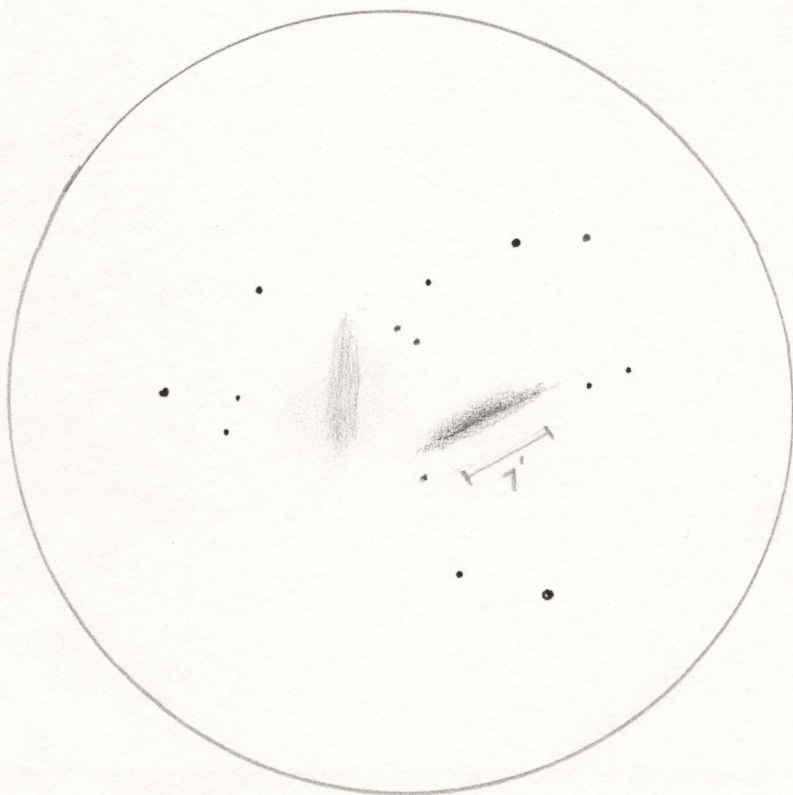
Observed again a week later and this sketch
is accurate. Confirmed by Alister with the poss print
from the Atlas of Galactic Nebulas.

Oct 16

The new moon weekend. Very warm, a low of 0° . No Dew, a few clouds but excellent transparency. Murray and I spent quite some time going after sh2-157, sh2-205, sh2-132, and much more.

NGC 672 (edge on) and IC 1727

Tri.



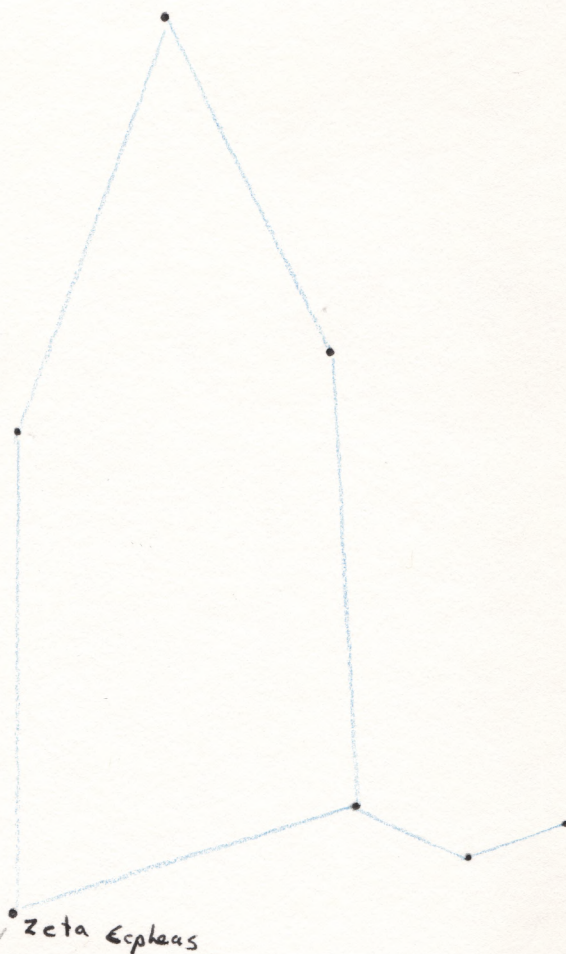
100x

672 is mag 10.9 and IC 1727 mag 11.5. Both are about 7 arcmin. A very nice way to compare two magnitudes. It's surprising just how much difference .6 of a magnitude makes.

On page 57 urano.

There is an area about 40' by 20' in a rich star field that you can see quite easily. Alister and I thought that the nebulosity extended for quite some distance to the north. About 1.5° total.

SK2-132



Zeta Epsilon

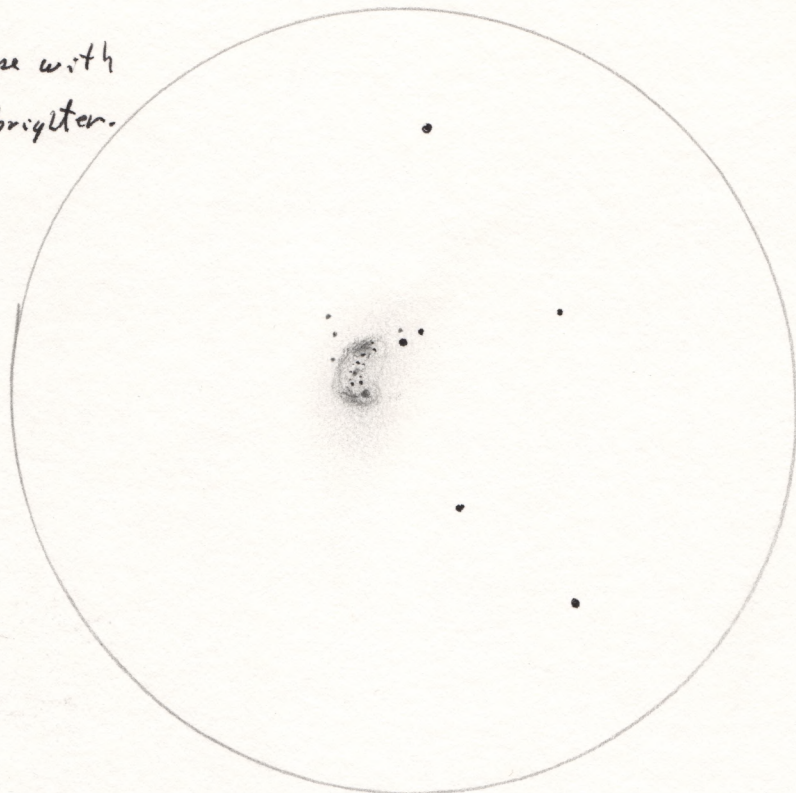
☆ 7008

50X photo Britas
OIII 2-5

Trans. Excellent.

NGC 7008

a kidney shape with
the bottom part brighter.
Embedded stars.
structure with
averted vision.



330X P.N.

o III

80" dia.

NGC 1491

Round with a V
notch out of it.
11 mag star.
30' in dia.



160X

o III

sh2-205

Very faint, but detectable when you sweep over it from the dark area surrounding. Very rich star field. Use averted vision and dark cloth.



50x
OIII
photo Binas
5-5

pg 39
urano

O 1491

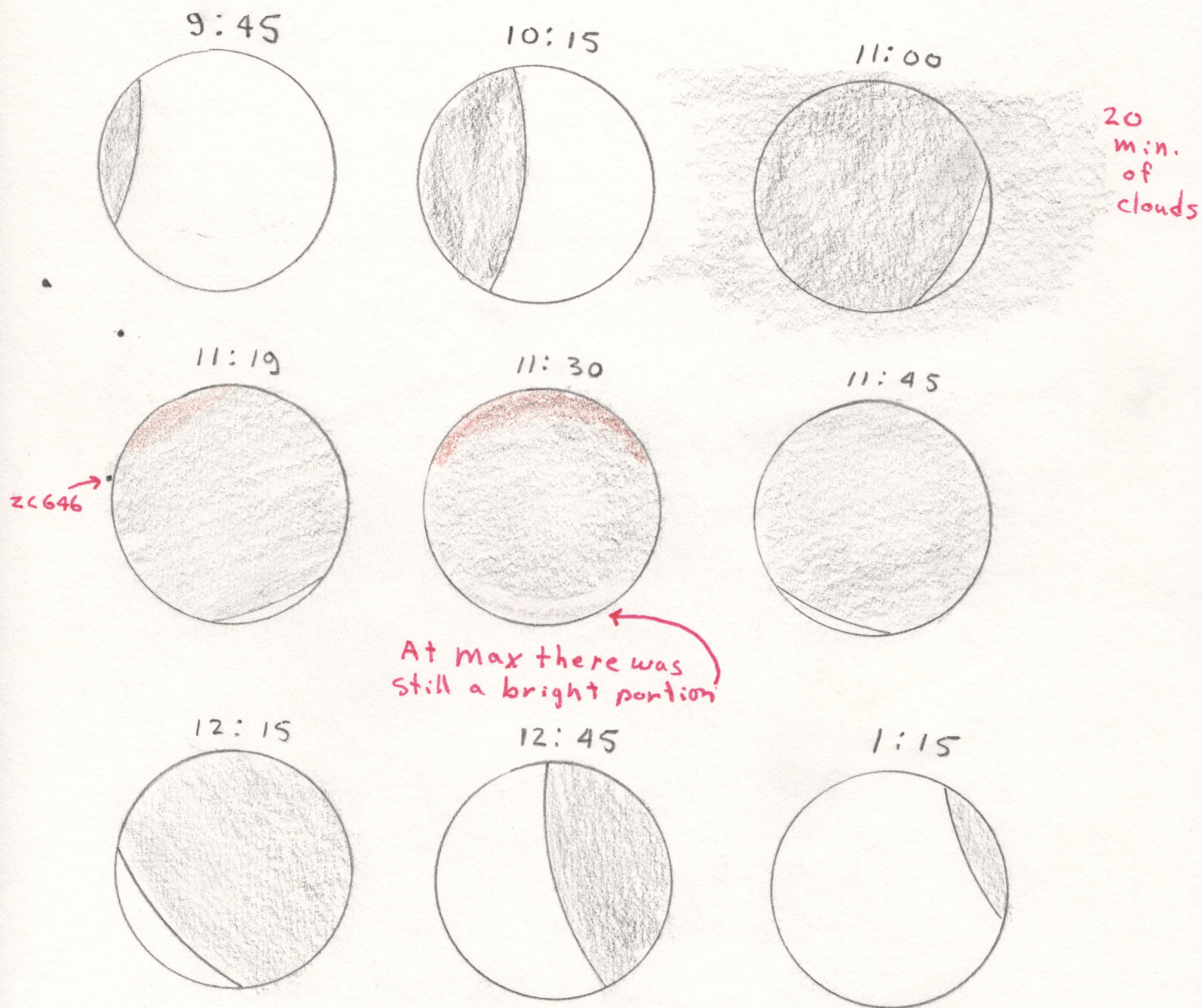
Algol

Near total Lunar Eclipse. 95%

Nov. 28.

9:30 → 1:30

The Graze expedition went to Fort Nelson for the graze during the eclipse. Their counter part was in Baja. It was a success. They measured the diameter of the moon within 100 meters.



The star ZC646 was occulted about $\frac{1}{3}$ the way down from the S pole. But it was a graze at Ft. Nelson.

March 6 -2° No dew all night long!

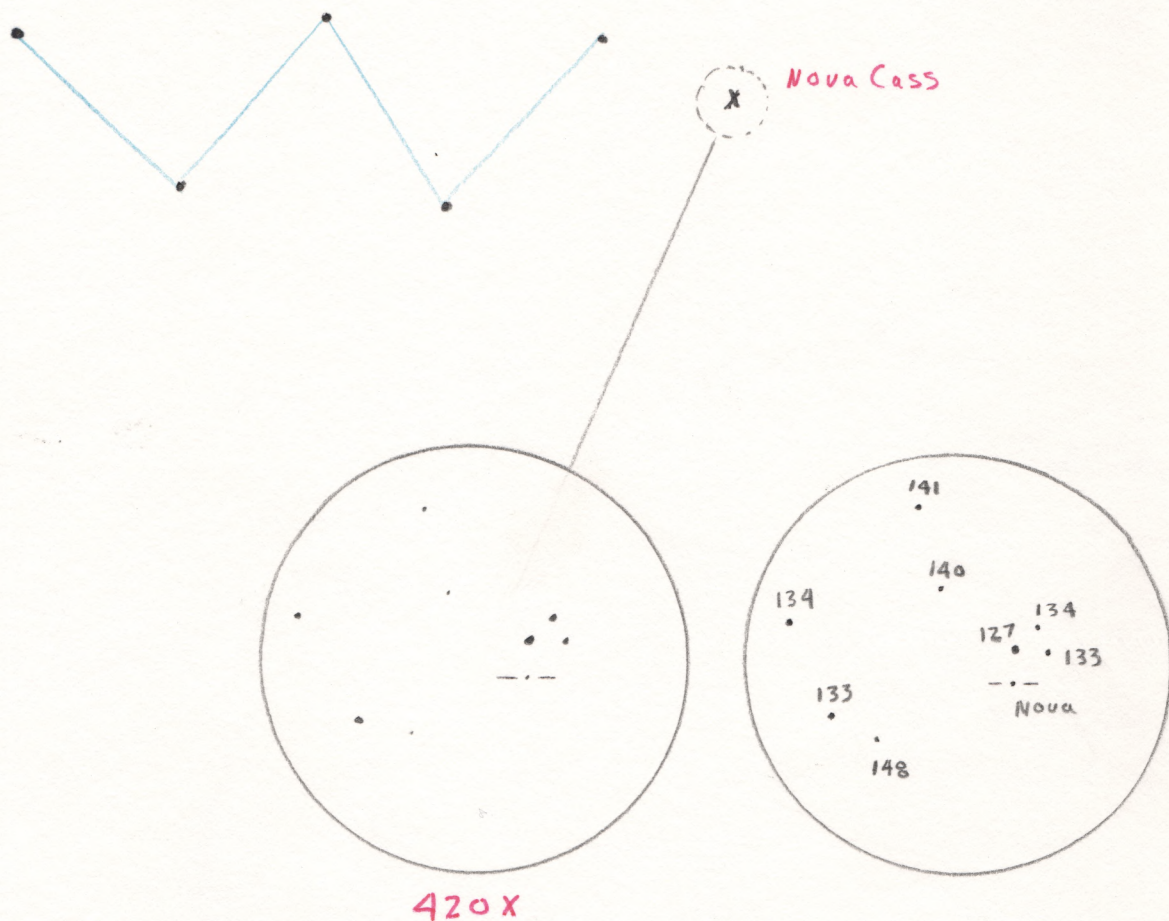
3 months since we have been out! Dec 14 was potentially an excellent night but I hit severe fog on the highway and was forced back.

Jan. and Feb. were bitterly cold (-30) and tons of snow, (broke all records, knee deep in back yard). Even on those very few days when it wasn't too cold, it was cloudy. Some days we had -30 and 6 inches of snow - so much for cold and clear. But this night was excellent when it finally cleared at 10:30 \rightarrow 2:30.

It was only about -2° and quite transparent.

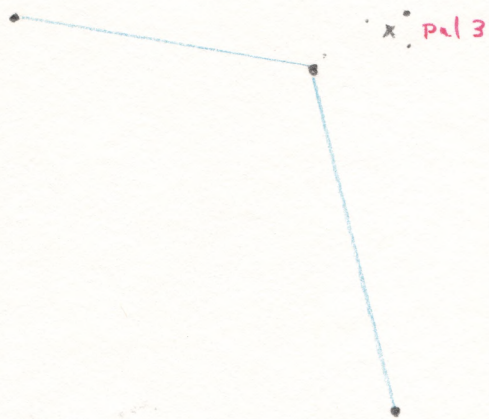
It was also extremely dry, no condensation at all even with a dark cloth overhead. We sat under cloud from 7 o'clock to 10, but we had some good laughs and when it cleared our mirrors were cool to say the least. It clouded over before we had a chance to look for comet Shoemaker/Levy 9, but we did find Palomar 3 which is mag 13.9 at 2.8' in dia, SL9 is 14 mag and a 2' slash \therefore it should have more surface brightness and be more easily seen. Maybe next week.

Nova Cass

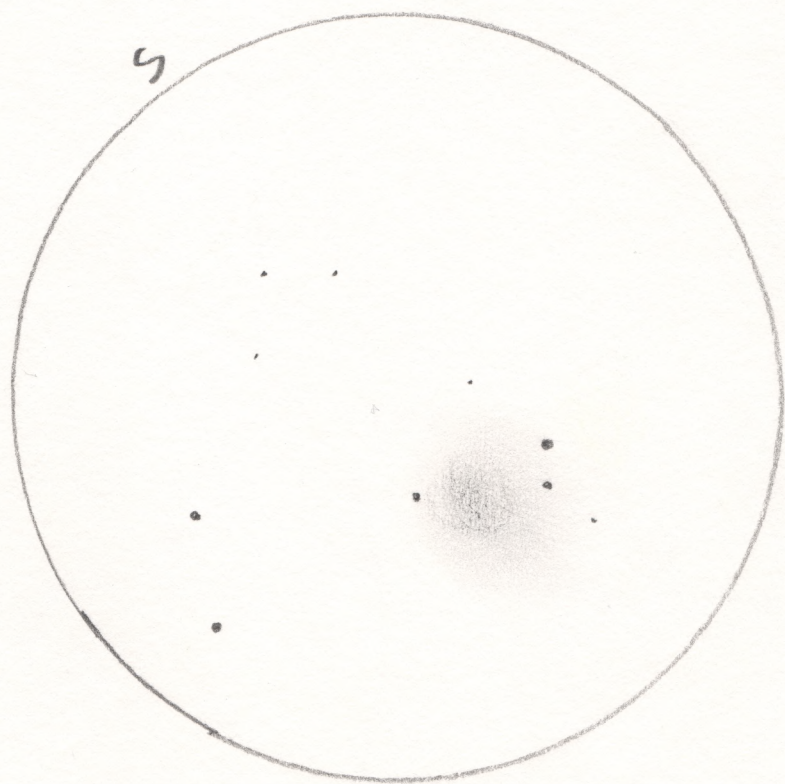


The Nova was between 14 and 14.1, which was easy to determine because there were 14 and 14.1 stars in the same field of view.

Palomar 3 in Sextans.



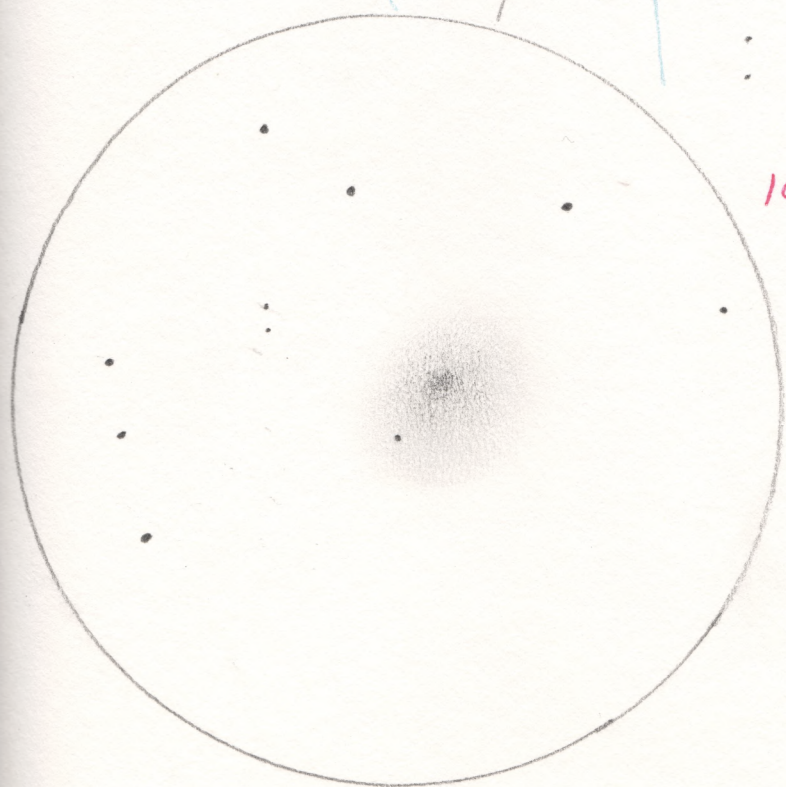
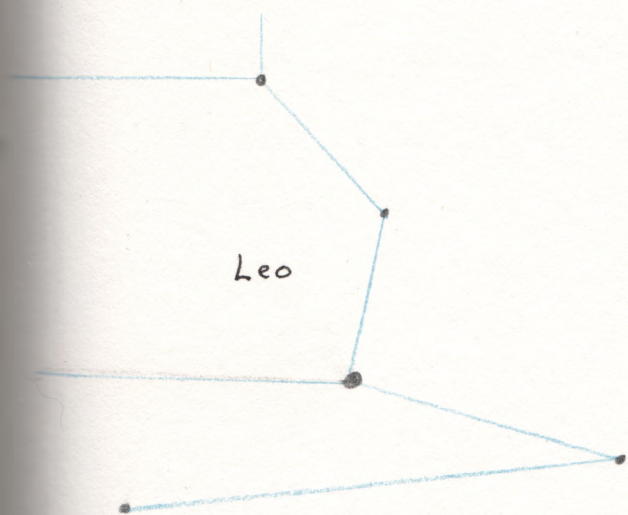
✓ confirmed
CCD Atlas.



270X

very hard object, dark cloth, averted vision etc.
mag 13.9 and 2.8' in diameter.

Comet Kushida in ~~Lynx~~^{Sextans}, about 12 mag and
20 arc min in dia, bright nucleus.

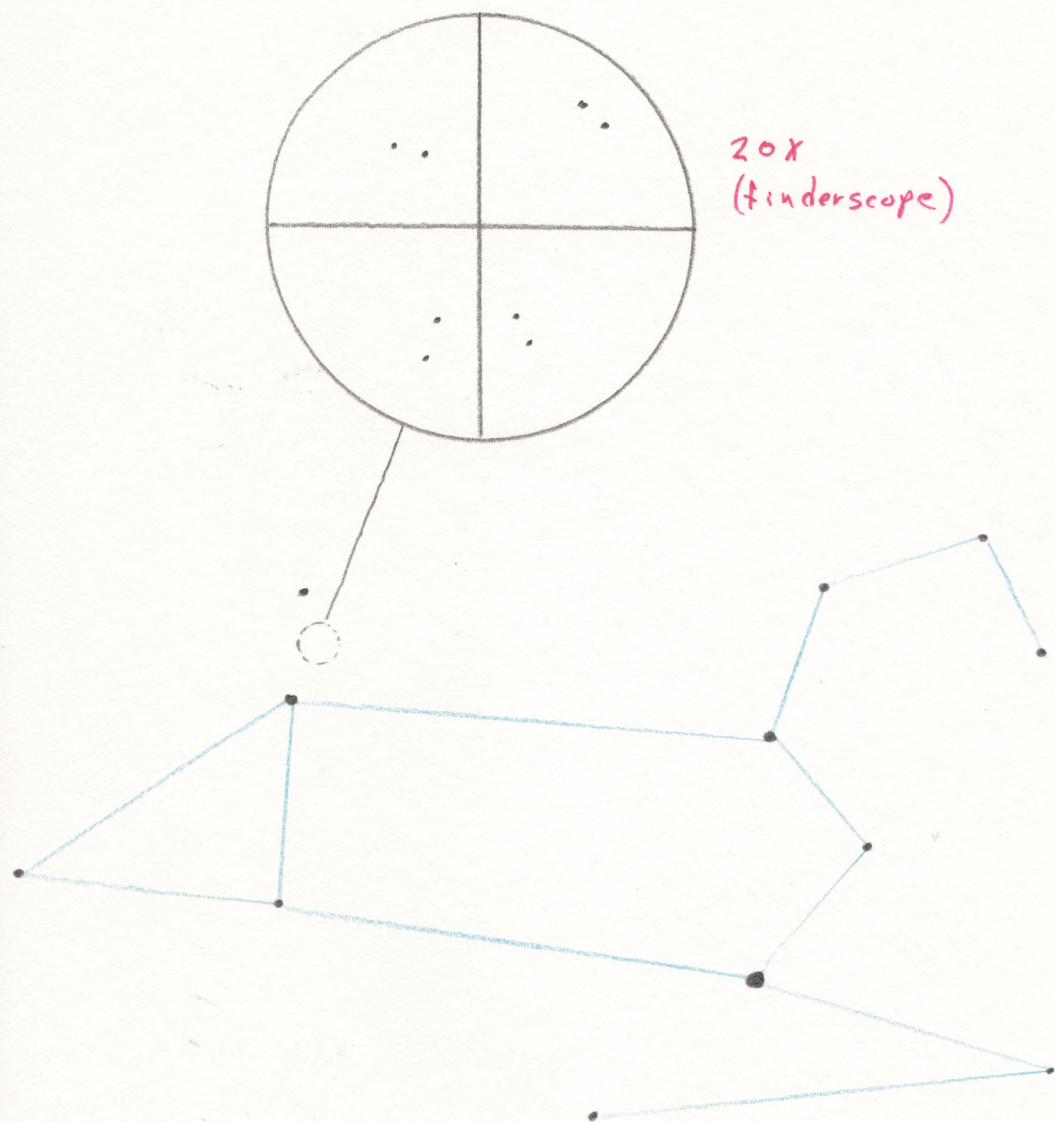


100X

About 12 mag and 20' in dia.
very bright nucleus.

4 Double stars!

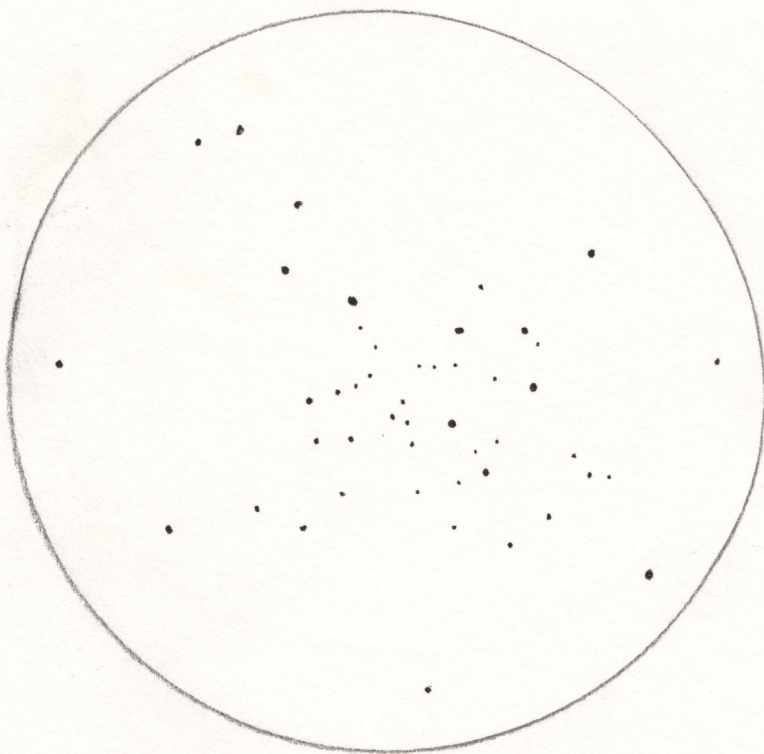
while looking for Leo II I ran across a
finderscope field that had 4 sets of double stars! One
in each quadrant no less.



Monday March 7. -5°

8 → 9:00 Major Aurora, snalles, curtains, green, red, blue,....
If you have to have Aurora, this is the kind you want. It sorta
cleared at 9:00, Orion was O.K. . We got in 2 hours and
then clouds rolled in. Home by midnight.

M36

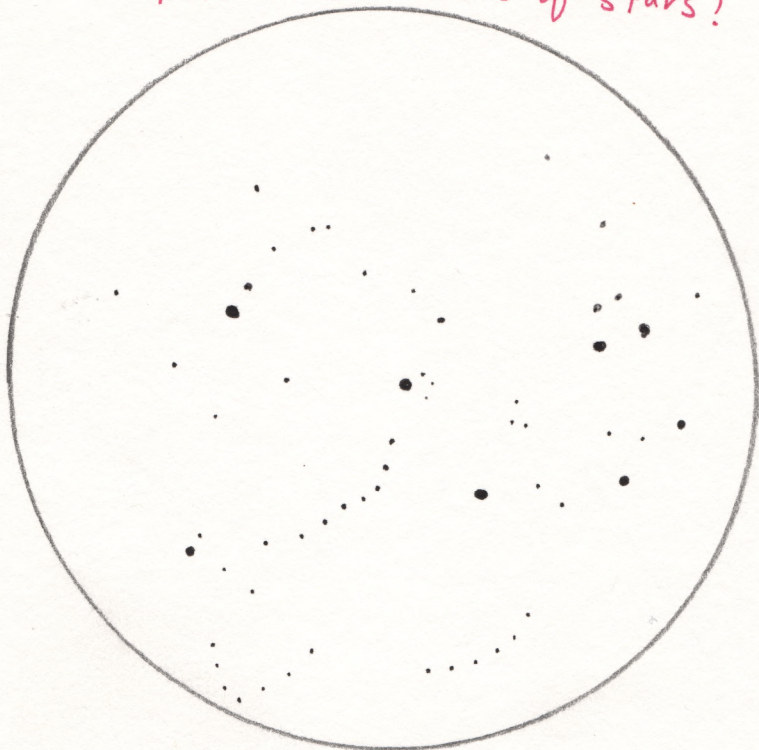


The night was poor with clouds drifting by but
between the clouds it was quite transparent. Overall
it was a night for open clusters. Thus M36.

Pleiades M45

20x in the 80mm finderscope.

Note the 3 chains of stars!



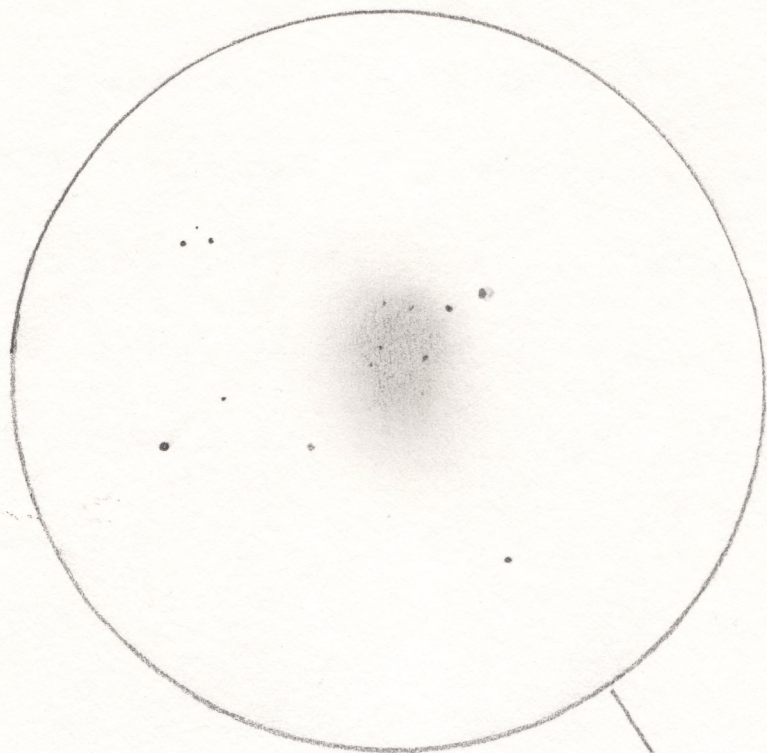
At 20x in the 80 mil finder the Pleiades are lovely. With the hundreds of times I've looked at this object I never noticed that there are 3 chains of stars. I always only noticed the one brighter one. Sketching really makes you look harder!

Sh2-301

Canis Major

8' x 7' photo brightness 1-5

page 318 urano.



Sirius

One of the easier sharpless objects at 10.5 mag and 9 arcmin in diameter. It's plotted in Sky Atlas but not labeled. Lots of embedded stars. Easy to see, but hard to find, I think it is misplotted in Uranometria.



Sh2-301



Sunday March 13

+5° overnight low! *****

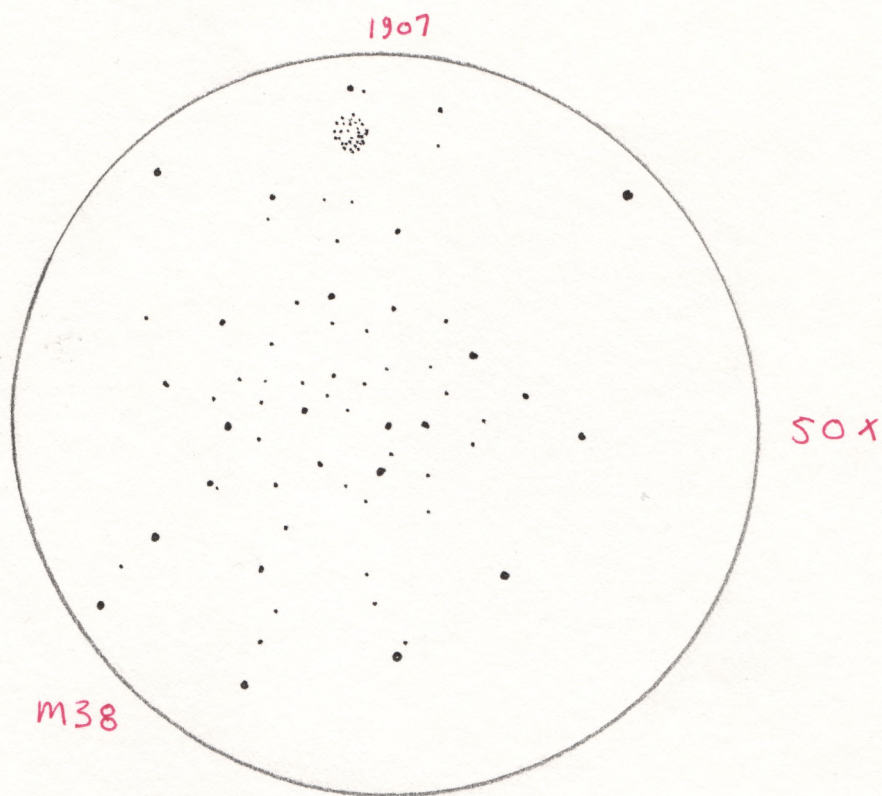
5 star night!

I've always noted that the very best nights we have had were always Sunday nights, and this was no exception. Coming back from the lake at 6:00 I could see it was going to be a fantastic night. The sky was very blue, orange horizon and not a cloud to be seen. The thin one day old moon was about to set and Venus was below it.



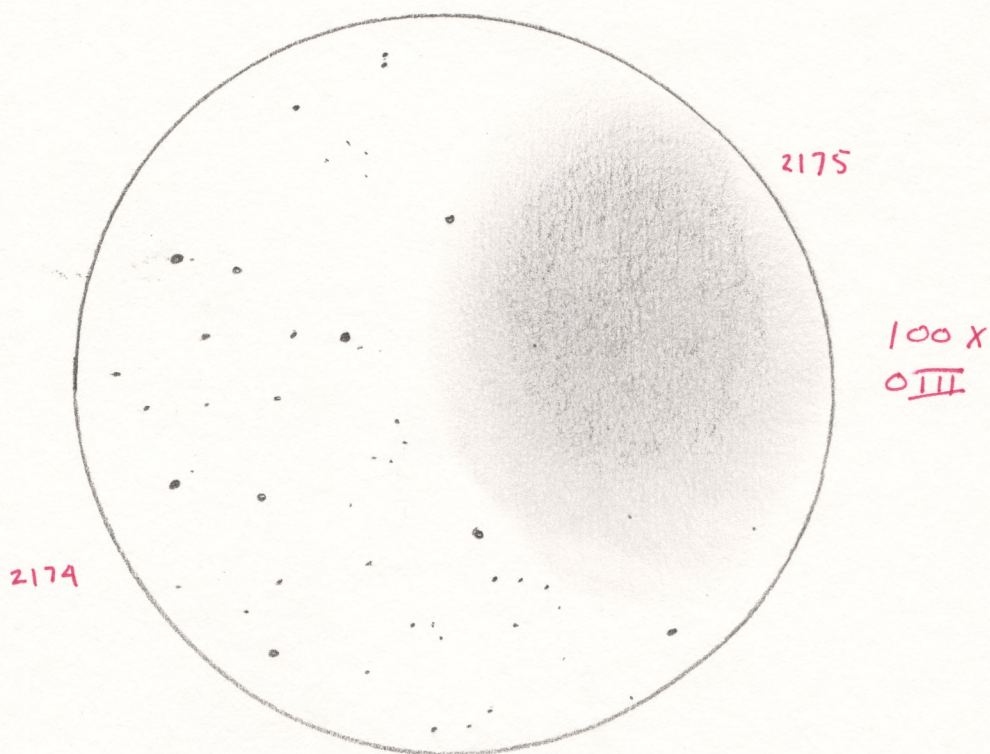
Absolutely no trace of cloud right down to the horizon! I don't recall ever see a sky so clear at sunset.

M38 and NGC 1907 Auriga.



These make a very striking pair. with the 40mm
M38 takes up a good portion of the field with 1907
at the edge.

NGC 2174 o.c.
2175 em neb.

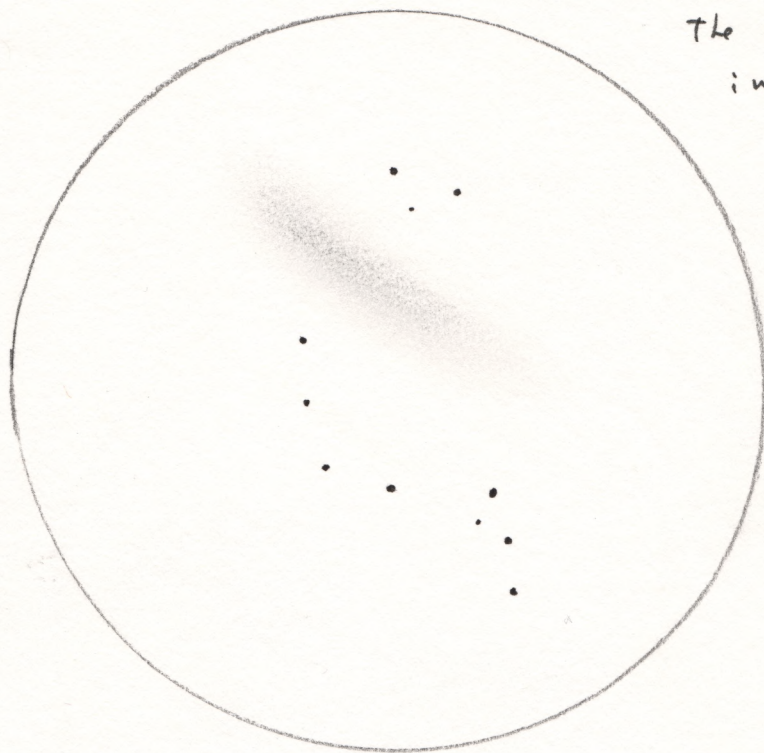


NGC 2174 is a large loose open cluster that spills into NGC 2175 an equally large emission nebula.

IC 443
Gem.

An arc shaped emission neb at the end
of a chain of about 9 mag. stars.

The neb is about 20'
in length.



50X
OIII

IC 444
Gem.



100X
OIII

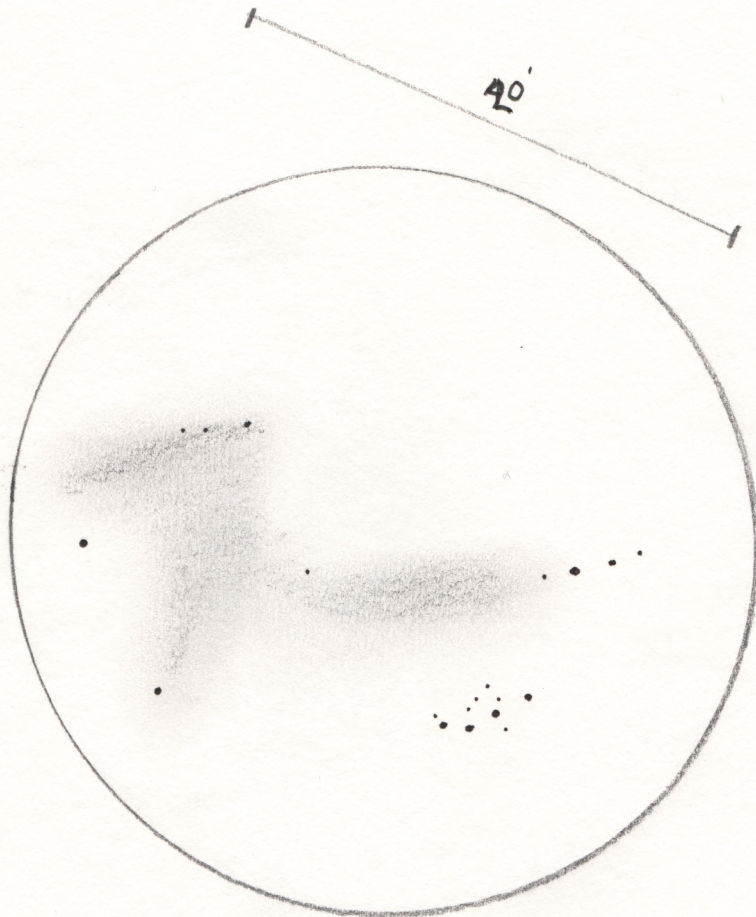
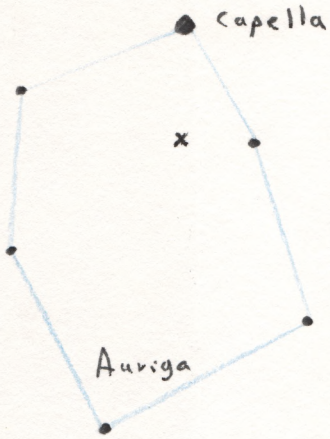
nebulosity around a star of about mag. 7.

Sh2-224

Auriga.

20' x 3' photo Brightness 5-5

page 66 urano.



Sh2-224

A very large odd shape. Must return to this again and spend more time on it. Super nova remnant Emission.

NGC 1274/75

~~sh2-247~~

Gem.

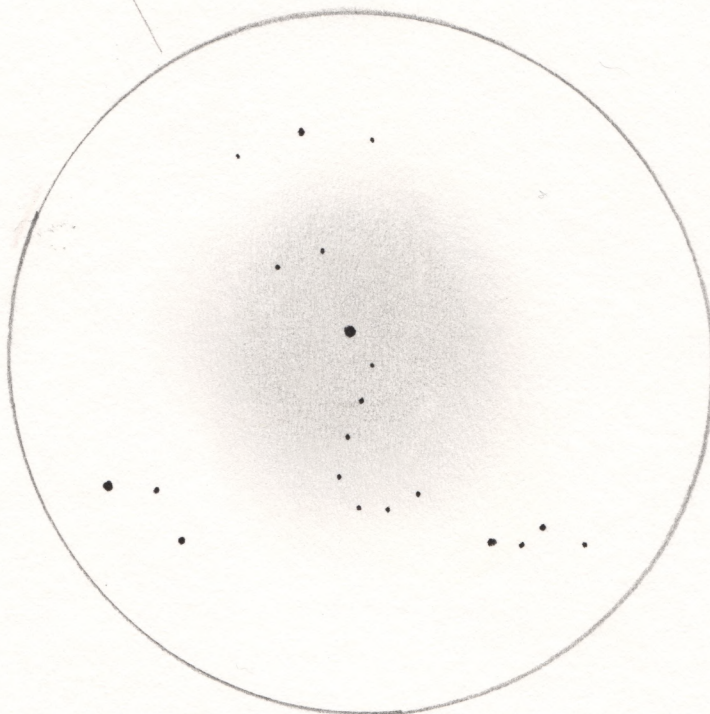
sh2-247 is less than 1°

away!

10' diameter

photo brtns. 3-5

urano 137



SOX

OIII

~~sh2-247~~

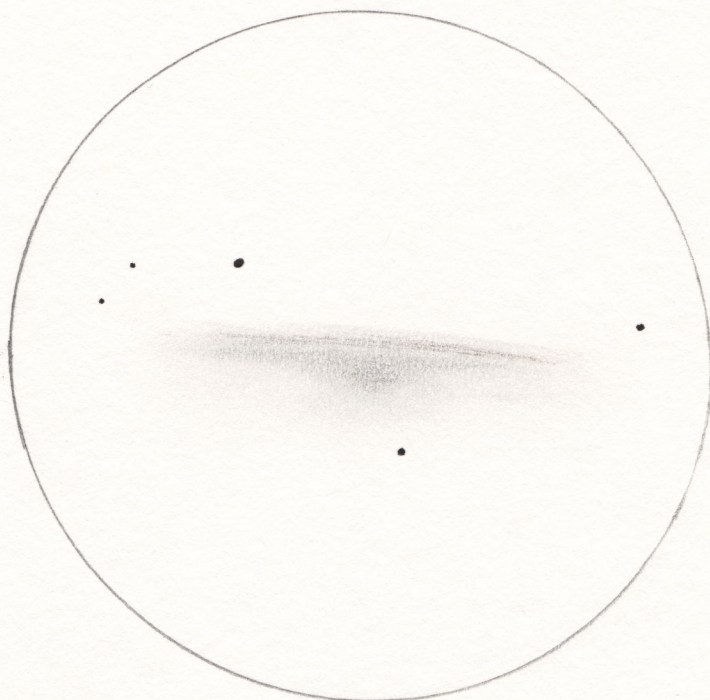
NGC 1274/75

A very easy object, as you sweep the field it pops into view. Very uneven edges, looks like a face on spiral gal. A chain of stars makes a question mark? Very nice.

sh2-247 1° away!

M 104

Virgo



320X

Sombrero

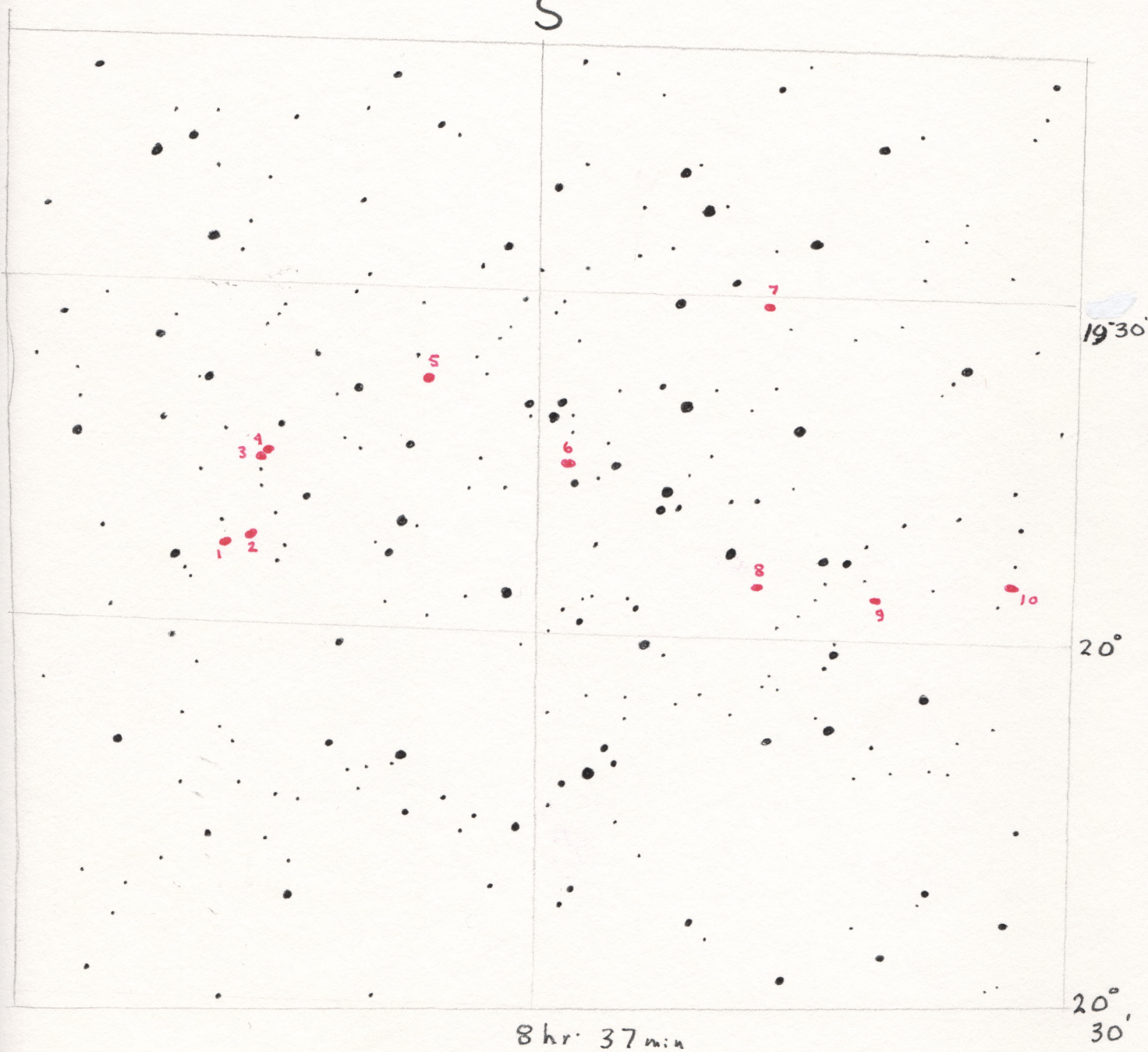
8 mag. 6 arc min width. Not a bad view but it's still a bit low so it could have been better.

Wens. March 30

+3°, no Aurora, snow gone.

The moon came up at 12:30, but from 8 → 12 it was excellent. I spent about 1½ hr. on M44 (Beehive) and I found all 10 galaxies!

S



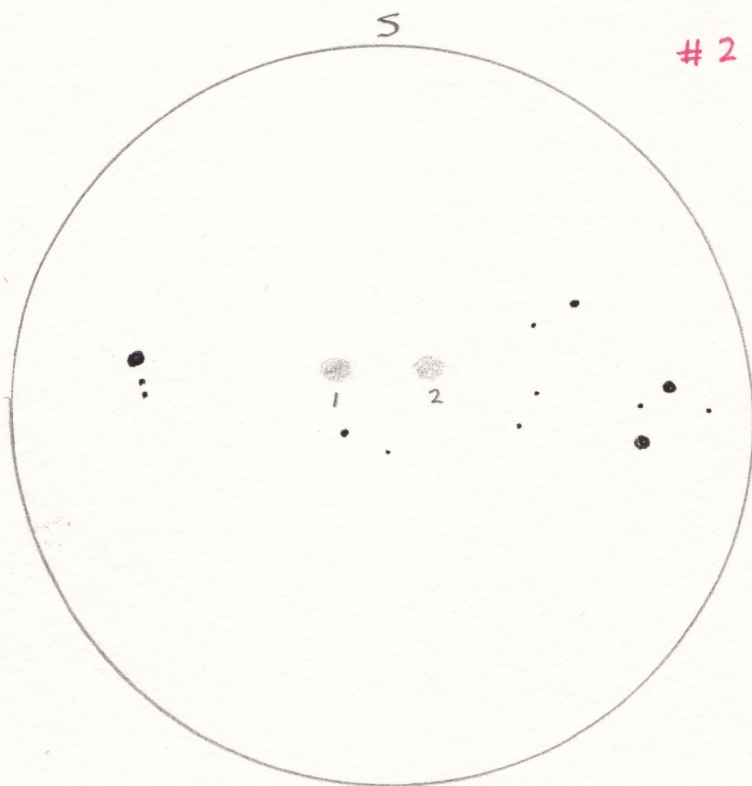
ALL 10 Galaxies in M44!

Galaxies in M44 cont.

#1 NGC 2624 13.6m

#2 NGC 2625 14.9

Seen fairly
easy.

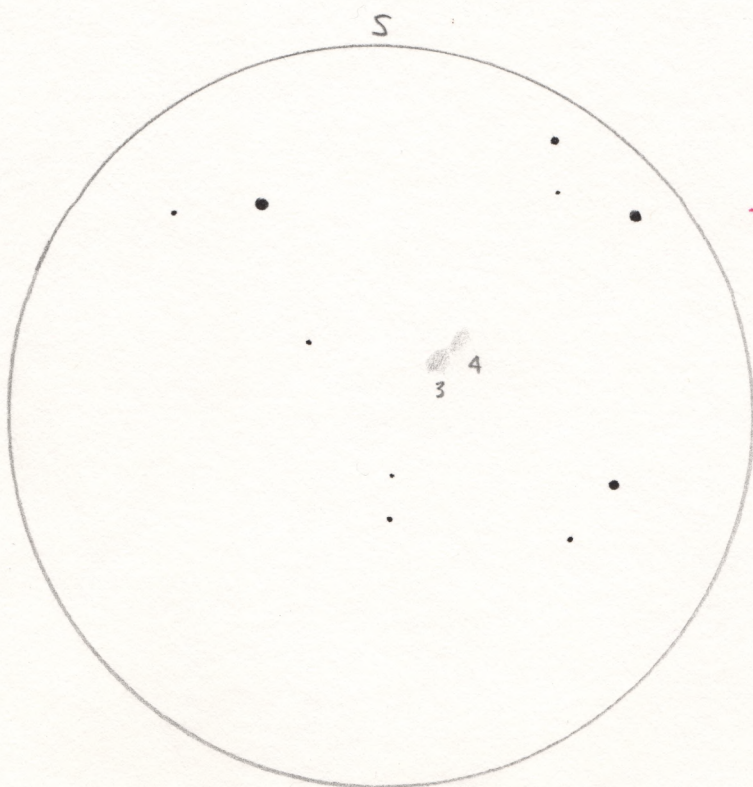


240X

#3 ZWG 089.056

14.2

Seen as an
elongated haze.



#4 Keel 152 15m

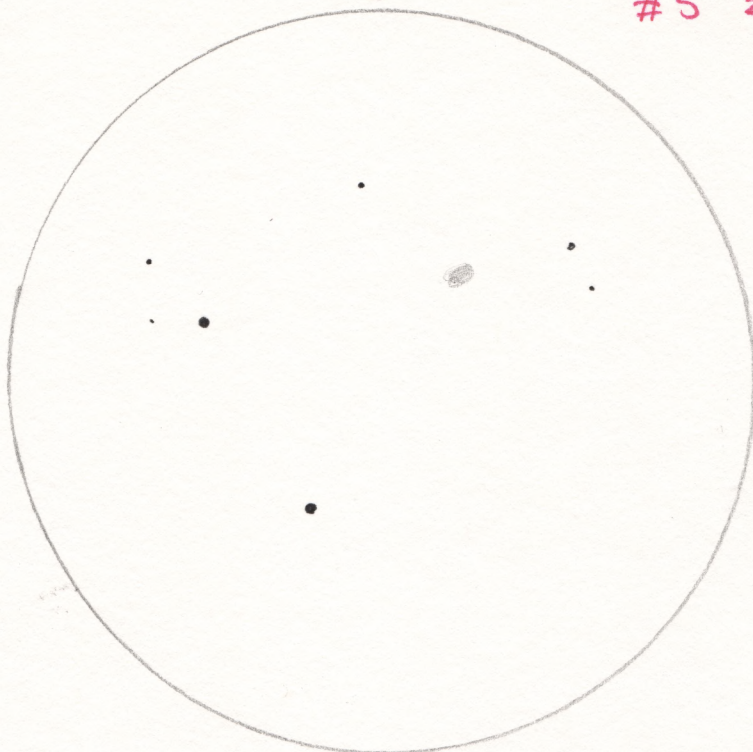
330X

Galaxies in M 44 cont

S

#5 ZWG 085.062 14.6

Averted
vision



330x

S

#6 IC 2388 14.7

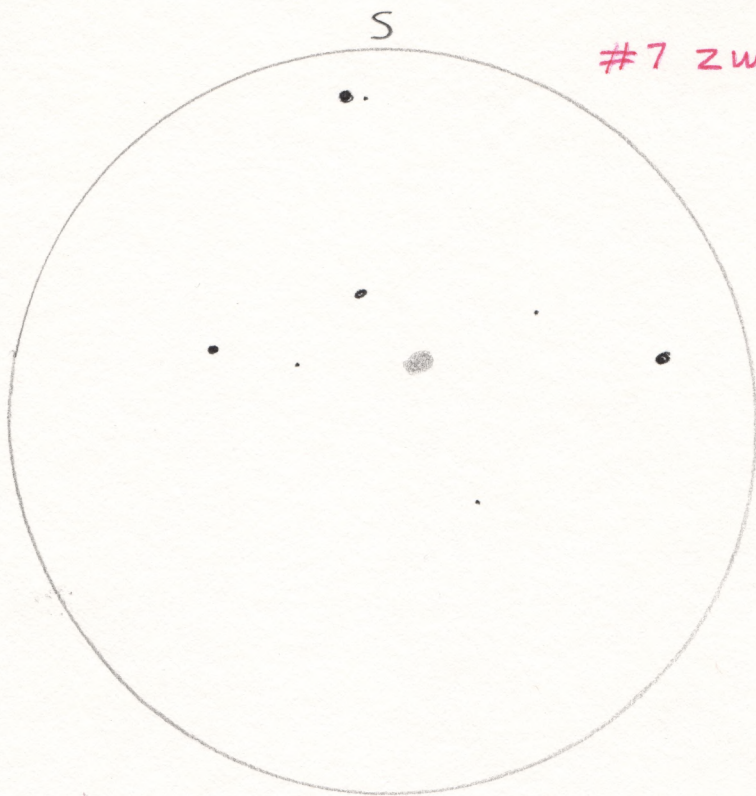
Averted
vision



330x

Galaxies in M44 cont

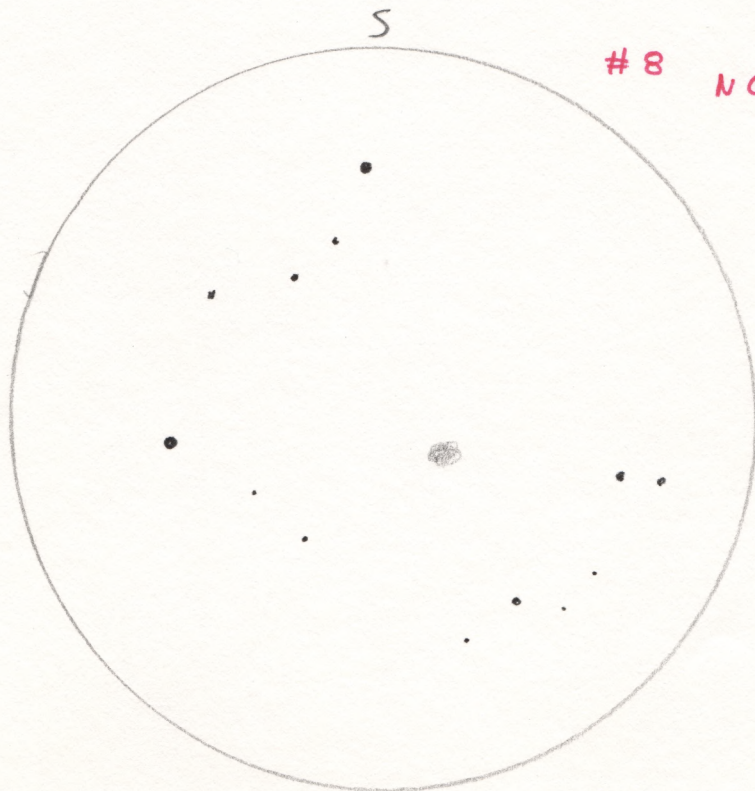
easy!



#7 ZWG 089.064 14.8

photo?
13.8 v?

Very hard



#8 NGC 2637 14.4

Galaxies in M44 cont

S

#9 NGC 2643 14.6

fairly easy



S

#10 NGC 2647 14.1

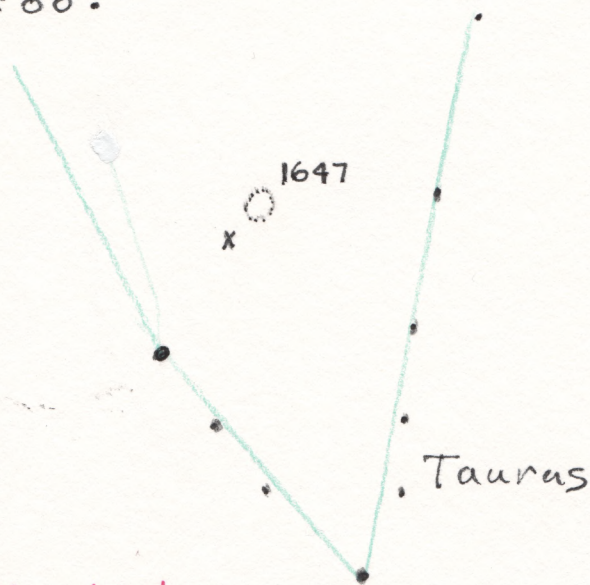
Very easy!

240x



Friday April 1st.

Just a couple of last minute hours at the Devon site. Very Heavy clouds all day and an abrupt clearing at 8:00. Major aurora by 11:00.

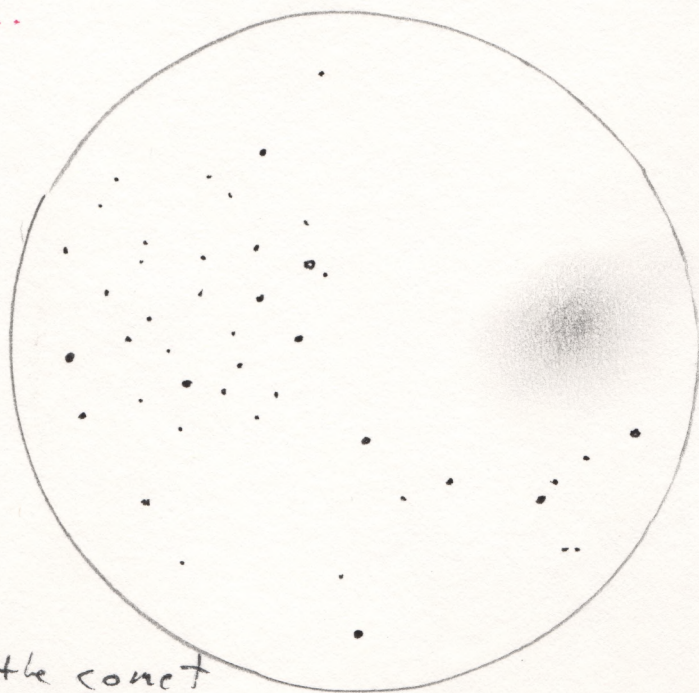


Comet

McNaught / Russe

Mag 6.5

20 arc min in dia.

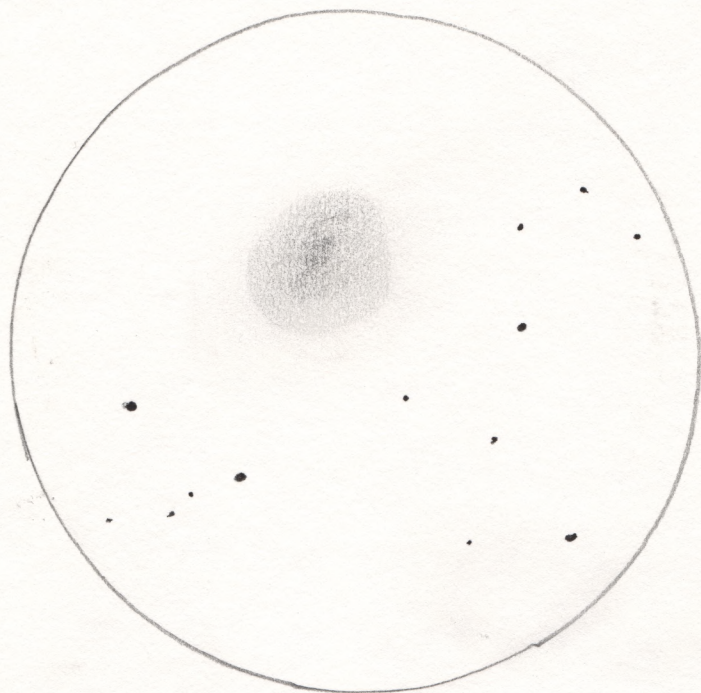


6"

30X

Some time tomorrow the comet will pass right through the o.c. 1647.

Comet McNaught/Russel con't



100X

very bright,
should be naked
eye from a good
dark site.

Super Nova in

NGC 4625

\approx mag 12.6

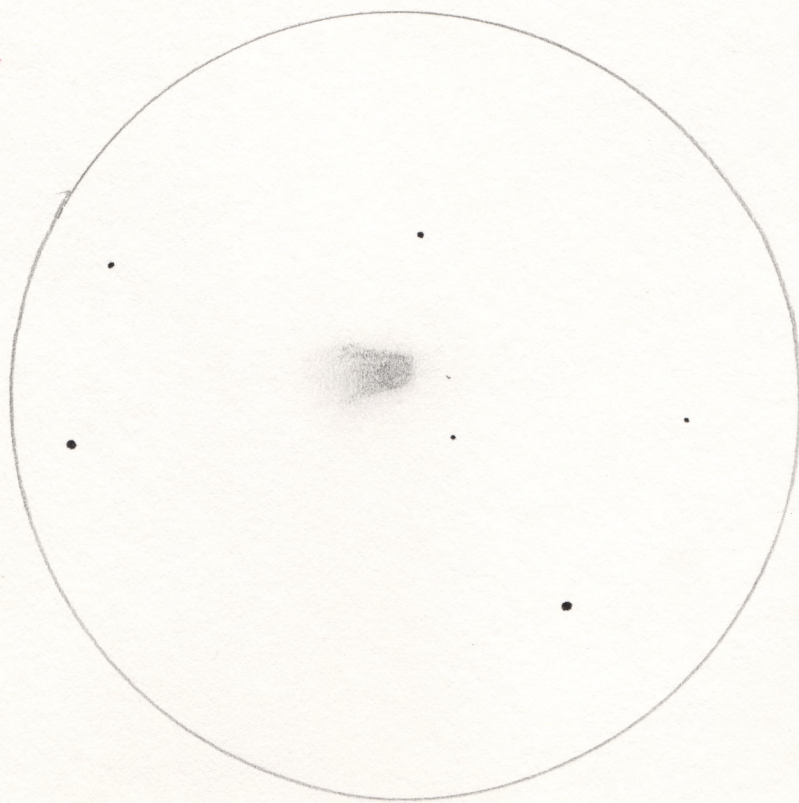


240X

Tues April 5

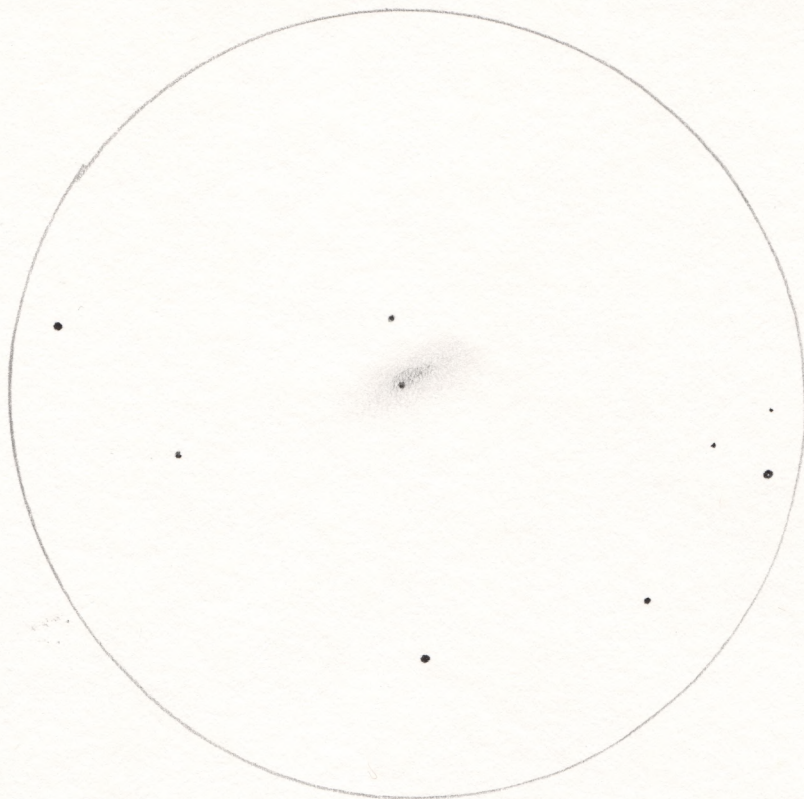
An excellent night until 1:00, Major aurora. Bruce figured out that there is a geo-magnetic storm related to the Sun's 30 day cycle that coincides with the new moon cycle! So we will get Aurora every observing window for a few months! But at least the aurora is incredible. Every color I've ever seen in aurora plus some orange also. Also very pulsating just like a flickering fire. The transparency was not too good tonight but we still had a lot of fun. 12 people out on a tues night!

Comet
Temple
in Virgo
12 mag.



280x

Supernova in NGC 4526, mag 12.6



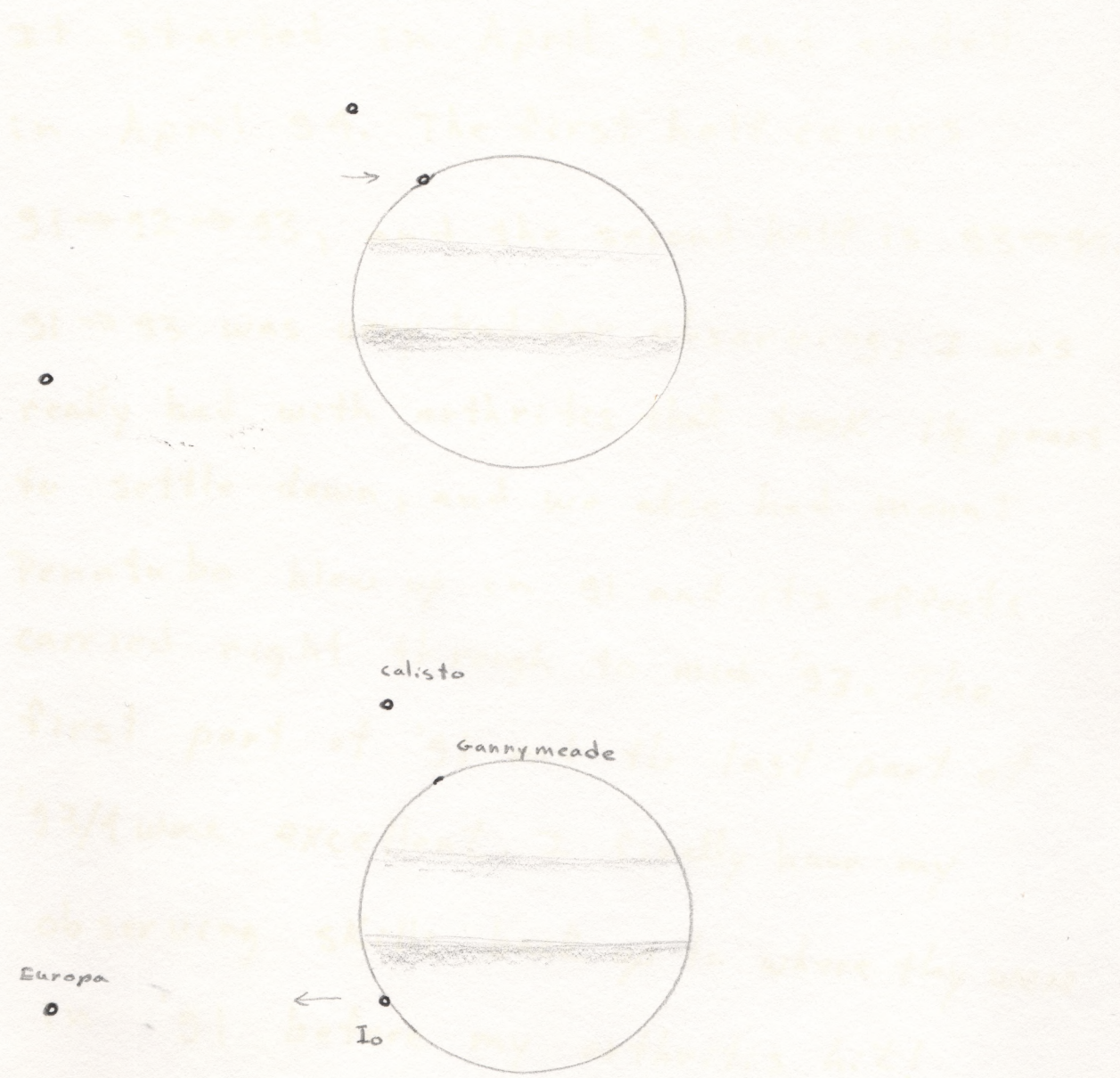
280x
star above is 12.6
& look identical.

Supernova in M51
found 2 days after
I was looking at it.



100x
Supernova
is obvious, I
wouldn't have
missed it!

The seeing on 7 was Bad but just as Gannymede was going behind, Io was coming out the same side going the opposite way.



This is it for this volume.
It started in April '91 and ended
in April 94. The first half covers
91 → 92 → 93, and the second half is 93 → 94.
91 → 93 was very bad for observing, I was
really bad with arthritis that took 1½ years
to settle down, and we also had Mount
Penatubo blew up in 91 and its effects
carried right through to mid '93. The
first part of '91 and the last part of
'93/4 were excellent. I finally have my
observing skills back up to where they were
in '91 before my arthritis hit!

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