

# Starhoppers' Guide to the Herschel 400

search sequences  
guide stars  
coordinates  
logbook

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# INTRODUCTION

The Astronomical League's Herschel Observe Program gives us the chance to tour 400 of the finest mostly-non-Messier galaxies, clusters, and nebulae in the night sky. Manually hunting and observing the Herschel 400 also marks a stargazer's graduation from 'rookie' to 'advanced' amateur observational astronomer. But, with the exception of a handful of targets, none of the Herschels are exactly begging to be found. It takes very dark and excellent sky conditions, preparation, determination, and more than a little patience to track down many of these elusive 'fuzzies'- even through the best backyard telescopes.

Depending on your experience, the Herschel 400 objects should all be detectable through a scope having at least 8 inches of aperture (10- 12 inches will really start to show some detail) under a 6th magnitude sky. (If you're not seeing 5.5 magnitude stars, you probably won't be seeing much of the Herschels either.)

There are countless Herschel lists available, usually grouping the targets by Right Ascension or constellation. But none provide a flowing or useful search sequence to these targets. R.A. may be an incredibly efficient way to list celestial objects but, due to local horizons and Earth's pesky tilt/rotation, it is also incredibly impractical to the deepsky enthusiast.

The search sequences in this observer's guide hedge on the Right Ascension format in favor of a 'Next-Available-Herschel-In-The-Area' format, while at the same time making an attempt at the smoothest, least-stressful path through each of the Herschel 400 constellations.

## HOW TO USE THIS GUIDE

Beneath each entry you will find the NGC number, object type, magnitude, and R.A./DEC coordinates, as well as the Tirion SkyAtlas2000.0 and Uranometria pages where the target can be found. To the right, for equatorial-mounted scopes, are the angular directions to the target from selected guide-stars, and in many cases, previous targets. Also, there is a log entry box provided to record the date, observing site, and notes (magnification used, eyepiece impression, etc.) for that target. Wide-field maps corresponding to the targets are found on the facing pages. To avoid clutter, these maps show only naked-eye (brighter than 5.5- 6.0 mag.) stars in the area, as well as boundaries and a representation of the constellation figures. Only the necessary guide-stars are labeled with their Greek symbol or Flamsteed number/designation. These pages also provide generous space for starhopping notes and additional target descriptions.

By centering the guide-stars in your scopefield and following the associated directions, this Guide in stand-alone mode will allow you to hunt-down and observe all of the Herschel 400 objects. However, cross-checking with SkyAtlas2000.0 or Uranometria is recommended to verify your search and targets.

Suggested (SUG) targets and constellations are occasionally included because of their proximity. These targets are not part of the current search sequence, but you may wish to pick them up while you're in the neighborhood. (Make sure to record the suggested targets' observations on their respective pages before returning to the current search sequence.) In a few cases, a series of nearby and tempting targets close to the constellation boundaries- such as Monoceros/Puppis or Virgo/Coma Berenices- have NOT been included to avoid confusion and prevent the observer from getting 'lost in space'.

To start your observing sessions you may wish to choose a constellation from the Midnight Culmination list on the following page. Distribution of the 400 targets is shown, as are the times at which each constellation's midpoint appears highest above the horizon. Priority constellations (chosen from the magical, arbitrary latitude of +40) have been tagged with a 'Southern Declination Advisory' as they contain targets with Declinations significantly below -10, and spend the least amount of time above the horizon. Of course you can afford to save the circumpolar constellations for last. You can also check-off completed constellations on that page.

Starhoppers using equatorial-mounted scopes should select an eyepiece which yields an actual field as close as possible to 1-degree. However, you may need increased power (less field) to root-out some of the fainter, more-stubborn Herschels. Those who use scopes of other designs will find the search order through each constellation most beneficial, while electronically-assisted 'cheaters' will have the coordinates and log at their disposal. Remember that, except for confirmation purposes, electronics should not be used as a search aid for the original Herschel 400 Observe Program.

Finally, these guide-stars and directions are certainly not written in stone. No doubt you will find your own paths and preferences along the way. But I hope this guide helps expedite your tour of the Herschel 400 and makes your experience more enjoyable and rewarding to some degree- no pun intended.  
Happy Hunting!

Stephen Saber  
December 2004

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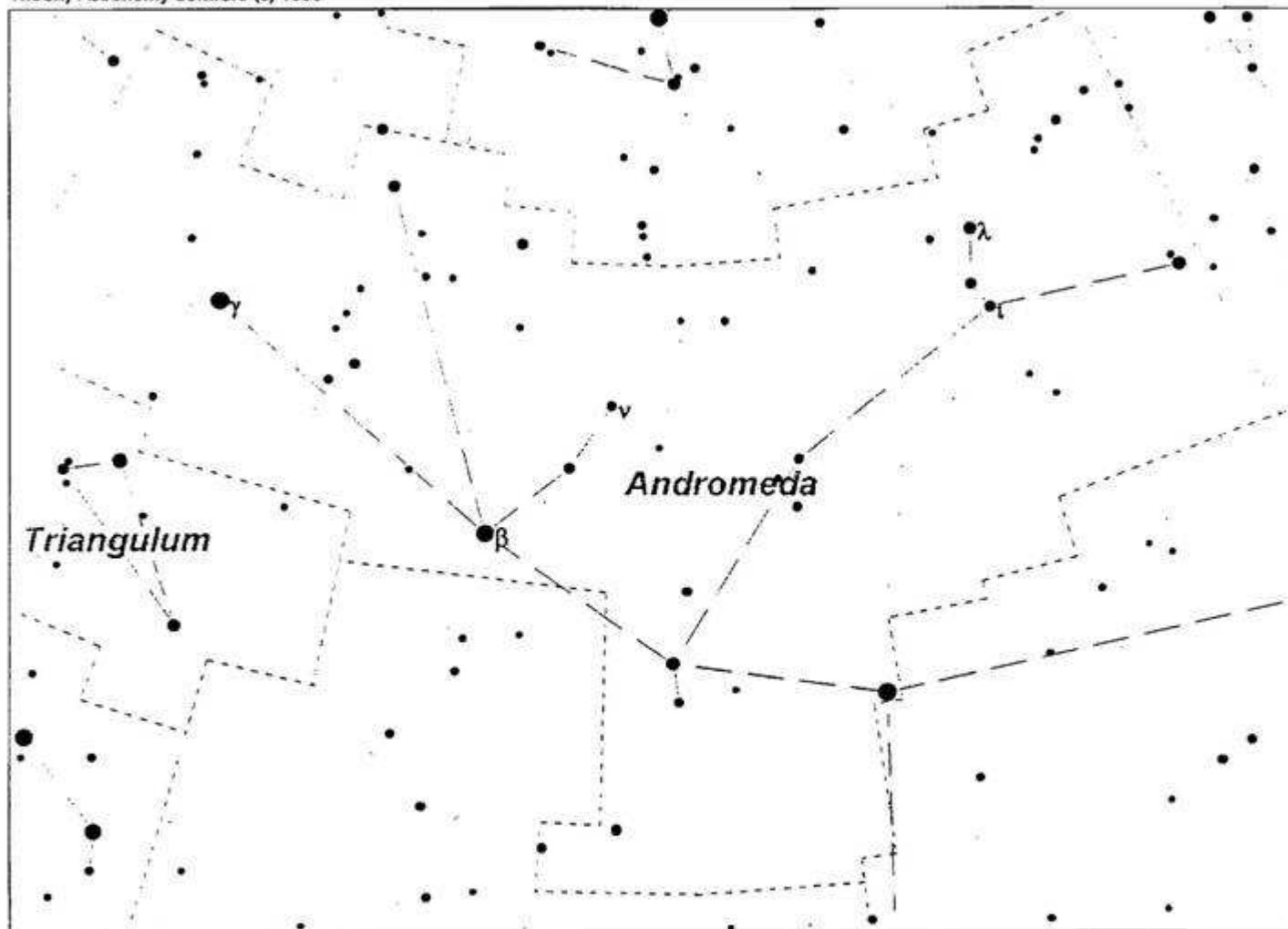
Starcharts used throughout this book have been generated using  
TheSky astronomy software and appear with the permission  
of Software Bisque, Inc.



# MIDNIGHT CULMINATION DATES FOR THE HERSCHEL 400 CONSTELLATIONS

\* denotes Southern Declination Advisory

CANIS MAJOR (4 targets)	JAN 2*	SCUTUM (2)	JUL 1
GEMINI (10)	JAN 5	SAGITTARIUS (18)	JUL 7*
MONOCEROS (14)	JAN 5	AQUILA (3)	JUL 16
PUPPIS (13)	JAN 8*	VULPECULA (6)	JUL 25
LYNX (3)	JAN 19	CYGNUS (10)	JUL 30
CANCER (1)	JAN 30	DELPHINUS (3)	JUL 31
PYXIS (2)	FEB 4*	AQUARIUS (4)	AUG 25*
SEXTANS (4)	FEB 22	LACERTA (3)	AUG 28
LEO MINOR (10)	FEB 23		
LEO (23)	MAR 1	PEGASUS (5)	SEP 1
URSA MAJOR (46)	MAR 11	SCULPTOR (3)	SEP 26*
CRATER (1)	MAR 12*	PISCES (2)	SEP 27
HYDRA (5)	MAR 15*	CEPHEUS (7)	SEP 29
CORVUS (3)	MAR 28*		
COMA BERENICES (24)	APR 2	ANDROMEDA (6)	OCT 9
CANES VENATICI (17)	APR 7	CASSIOPEIA (16)	OCT 9
VIRGO (50)	APR 11*	CETUS (13)	OCT 15*
		TRIANGULUM (1)	OCT 23
		ARIES (1)	OCT 30
BOOTES (5)	MAY 2	PERSEUS (10)	NOV 7
LIBRA (1)	MAY 9*	ERIDANIS (3)	NOV 10*
URSA MINOR (1)	MAY 13	TAURUS (2)	NOV 30
DRACO (5)	MAY 24		
SCORPIUS (2)	JUN 3*	ORION (8)	DEC 13
SERPENS (1)	JUN 6	LEPUS (1)	DEC 14*
OPHIUCHUS (15)	JUN 11*	AURIGA (6)	DEC 21
HERCULES (2)	JUN 13	CAMELOPARDALIS (5)	DEC 23



# ANDROMEDA

ngc7686  
OC MAG 5.5  
RA 23 30.2 DEC 49 08  
SA2000 4 URAN 88

from  $\lambda$  AND go  $1.2^\circ$  W and  $2.7^\circ$  N to ngc7686

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc7662  
PN MAG 8.5  
RA 23 25.9 DEC 42 33  
SA2000 4 URAN 88

from  $\iota$  AND go  $.7^\circ$  S and  $2.3^\circ$  W to ngc7662

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc205 (m110)  
GX MAG 8.0  
RA 0 40.4 DEC 41 41  
SA2000 4 URAN 60

from  $\nu$  AND go  $.6^\circ$  N and  $1.8^\circ$  W to ngc205  
(ngc205 lies at the eastern edge of m31)  
\*sug targets 278 and 185 Cas\*

date \_\_\_\_\_ site \_\_\_\_\_

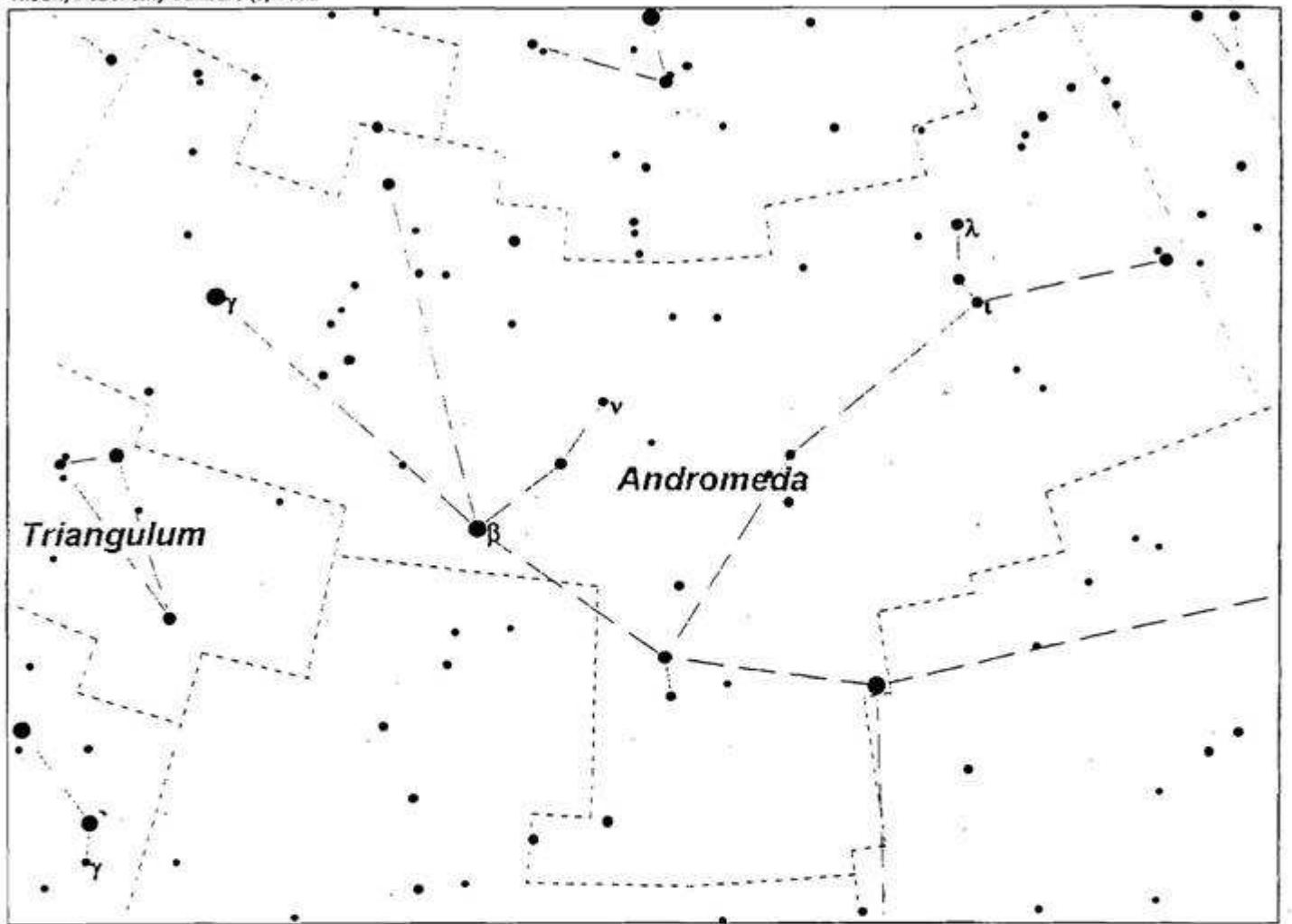
notes \_\_\_\_\_

ngc404  
GX MAG 10.5  
RA 1 09.5 DEC 35 43  
SA2000 4 URAN 91

ngc404 lies  $.1^\circ$  NW of  $\beta$  AND  
(place  $\beta$  AND just out of scope field)  
\*sug target 598 Tri\*

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



# ANDROMEDA (continued)

ngc752

OC MAG 6.0

RA 1 57.8 DEC 37 41

SA2000 4 URAN 62

from  $\gamma$  AND go 1.2° W and 4.6° S to ngc752

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc891

GX MAG 10.0

RA 2 22.6 DEC 42 21

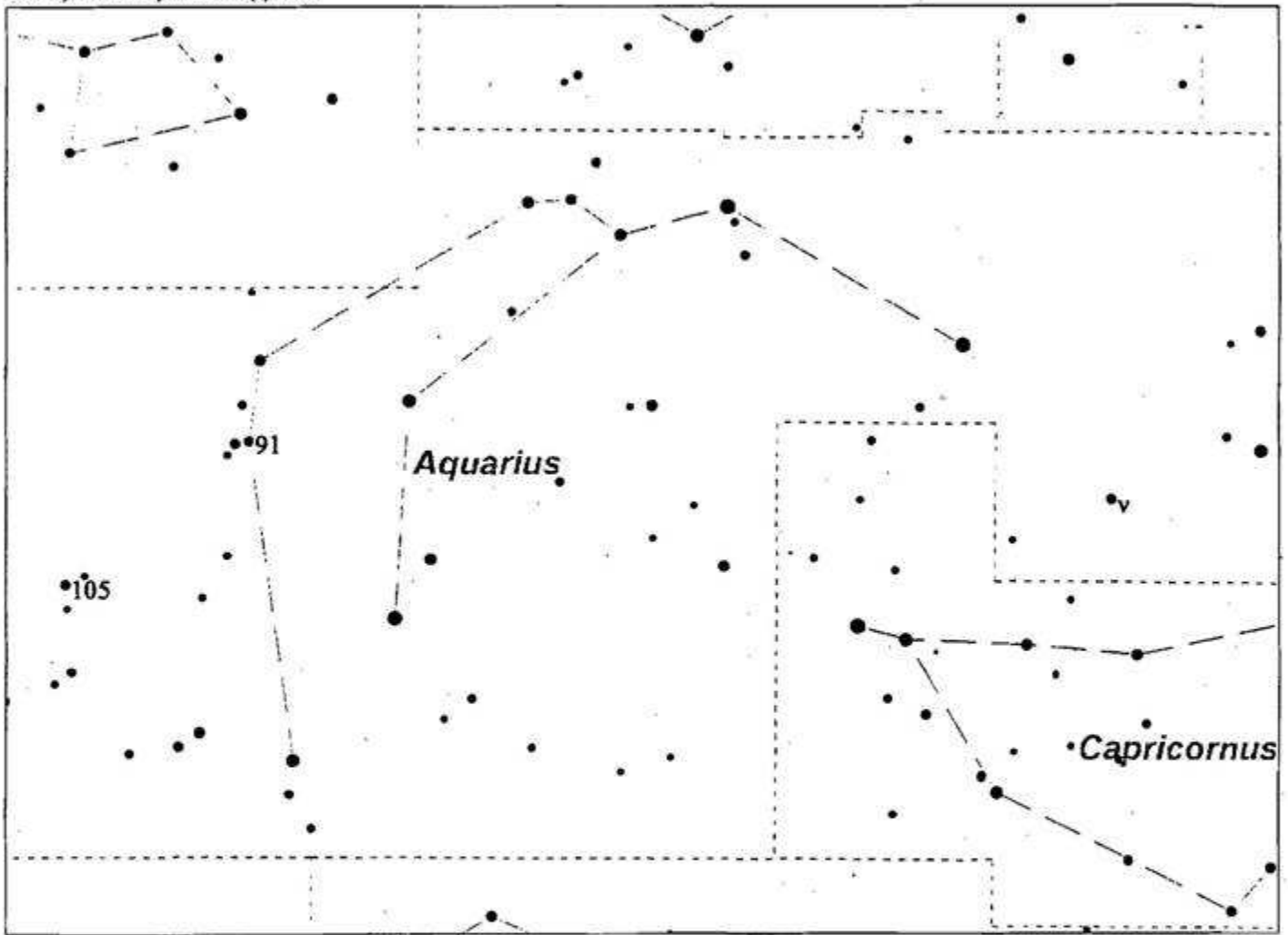
SA2000 4 URAN 62

from  $\gamma$  AND go 3.5° E to ngc891

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*PERSEUS SEARCH SEQUENCE BEGINS AT  $\phi$  PER\*





# AQUARIUS

\*SOUTHERN DECLINATION ADVISORY\*

ngc7009  
PN MAG 8.0  
RA 21 04.2 DEC -11 22  
SA2000 17 URAN 300

from v AQR go 1.3° W to ngc7009

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc7606  
GX MAG 11.0  
RA 23 19.1 DEC -8 30  
SA2000 17 URAN 304

from star 91 AQR go .8° E and .6° N to ngc7606

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc7723  
GX MAG 11.0  
RA 23 39.0 DEC -12 58  
SA2000 17 URAN 304

from star 105 AQR go .9° W and 1.6° N to ngc7723

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

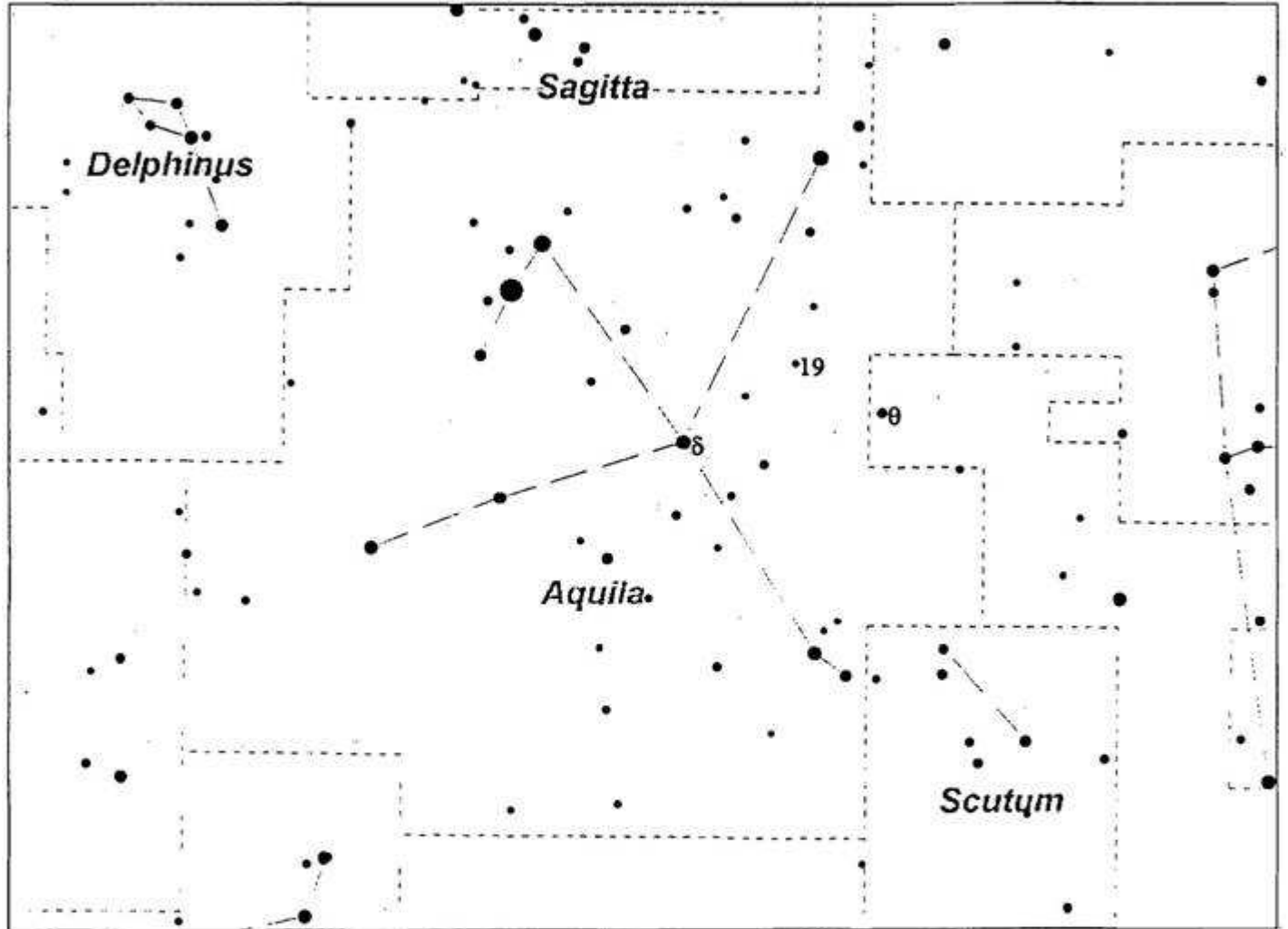
ngc7727  
GX MAG 11.0  
RA 23 39.9 DEC -12 18  
SA2000 17 URAN 304

from ngc7723 go .2° E and .7° N to ngc7727

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*CETUS SEARCH SEQUENCE BEGINS AT  $\eta$  CET\*



# AQUILA

ngc6755  
OC MAG 7.5  
RA 19 07.8 DEC 4 14  
SA2000 16 URAN 251

from  $\theta$  SER go  $2.9^\circ$  E to ngc6755

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc6756  
OC MAG 10.5  
RA 19 08.7 DEC 4 41  
SA2000 16 URAN 251

from ngc6755 go  $.2^\circ$  E and  $.4^\circ$  N to ngc6756

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc6781  
PN MAG 12.0  
RA 19 18.5 DEC 6 32  
SA2000 16 URAN 251

from ngc6756 go  $.1^\circ$  E and  $1.4^\circ$  N to star 19 AQL

then

from star 19 AQL go  $.5^\circ$  N and  $2.3^\circ$  E to ngc6781

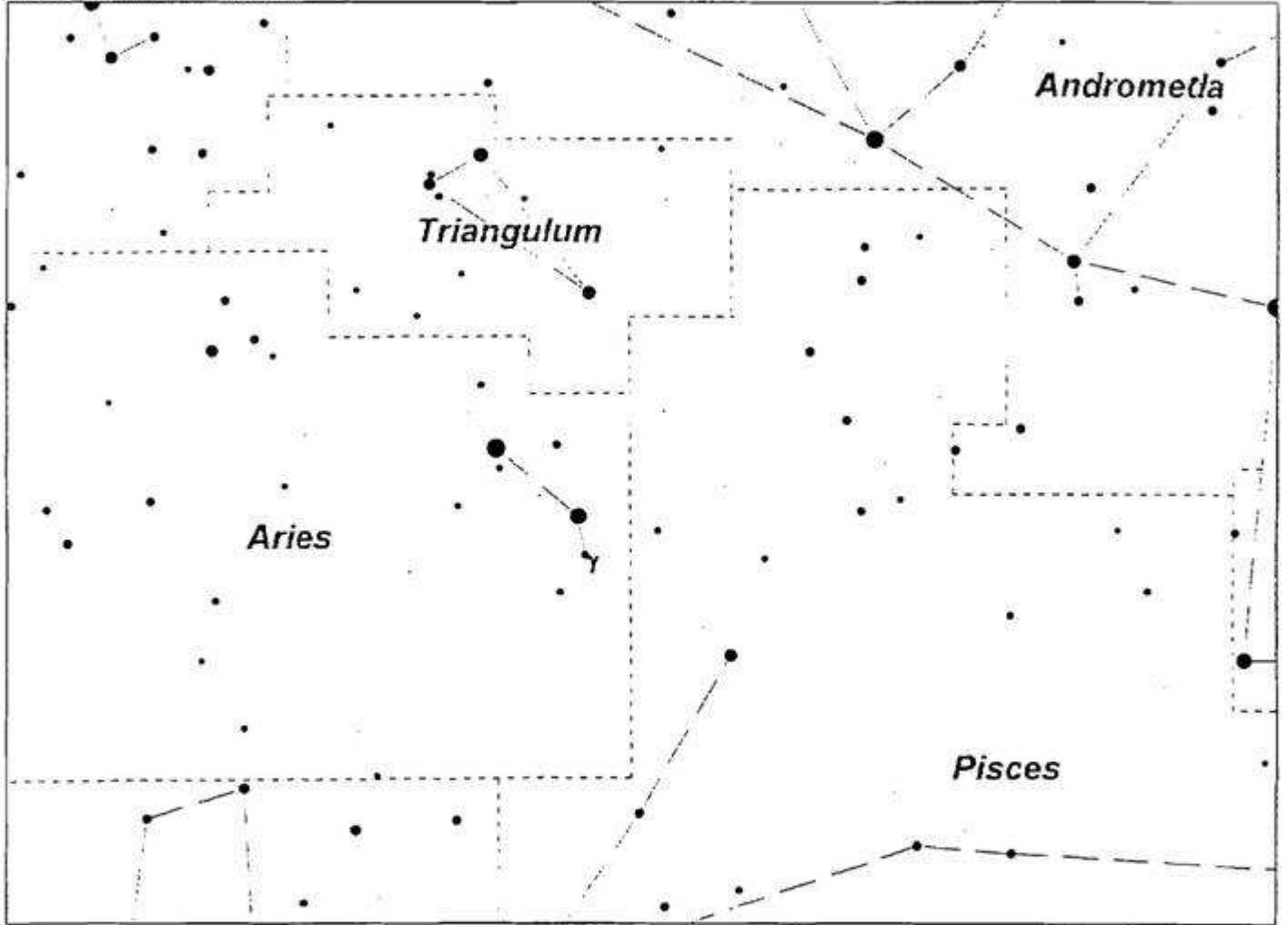
OR

from  $\delta$  AQL go  $1.8^\circ$  W and  $3.4^\circ$  N to ngc6781

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*SCUTUM SEARCH SEQUENCE BEGINS AT  $\alpha$  SCT\*  
\*DELPHINUS SEARCH SEQUENCE BEGINS AT  $\gamma$  SAG\*



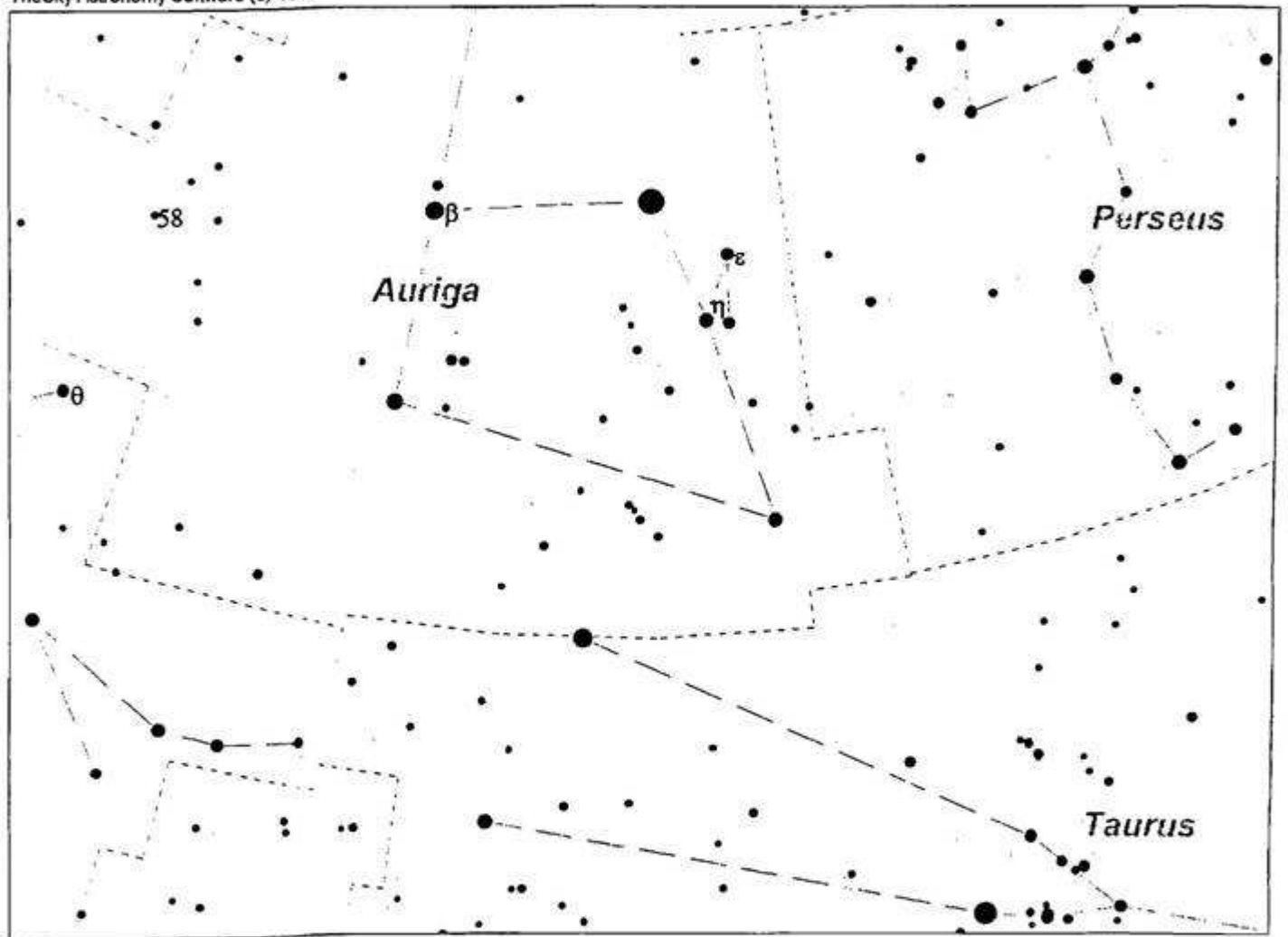
# ARIES

ngc772  
GX MAG 10.5  
RA 1 59.4 DEC 19 00  
SA2000 4 URAN 129

from  $\gamma$  ARI go .3° S and 1.4° E to ngc772  
\*sug target 598 Tri\*

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_





# AURIGA

ngc1664  
OC MAG 7.5  
RA 4 51.1 DEC 43 42  
SA2000 5 URAN 65

from  $\epsilon$  AUR go  $.1^\circ$  S and  $2.0^\circ$  W to ngc1664

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc1857  
OC MAG 7.0  
RA 5 20.2 DEC 39 21  
SA2000 5 URAN 66

from  $\eta$  AUR go  $1.9^\circ$  S and  $2.6^\circ$  E to ngc1857

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc1907  
OC MAG 8.0  
RA 5 28.0 DEC 35 19  
SA2000 5 URAN 97

from ngc1857 go  $1.7^\circ$  E and  $3.5^\circ$  S to m38  
ngc1907 lies  $.2^\circ$  W and  $.5^\circ$  S of m38

date \_\_\_\_\_ site \_\_\_\_\_

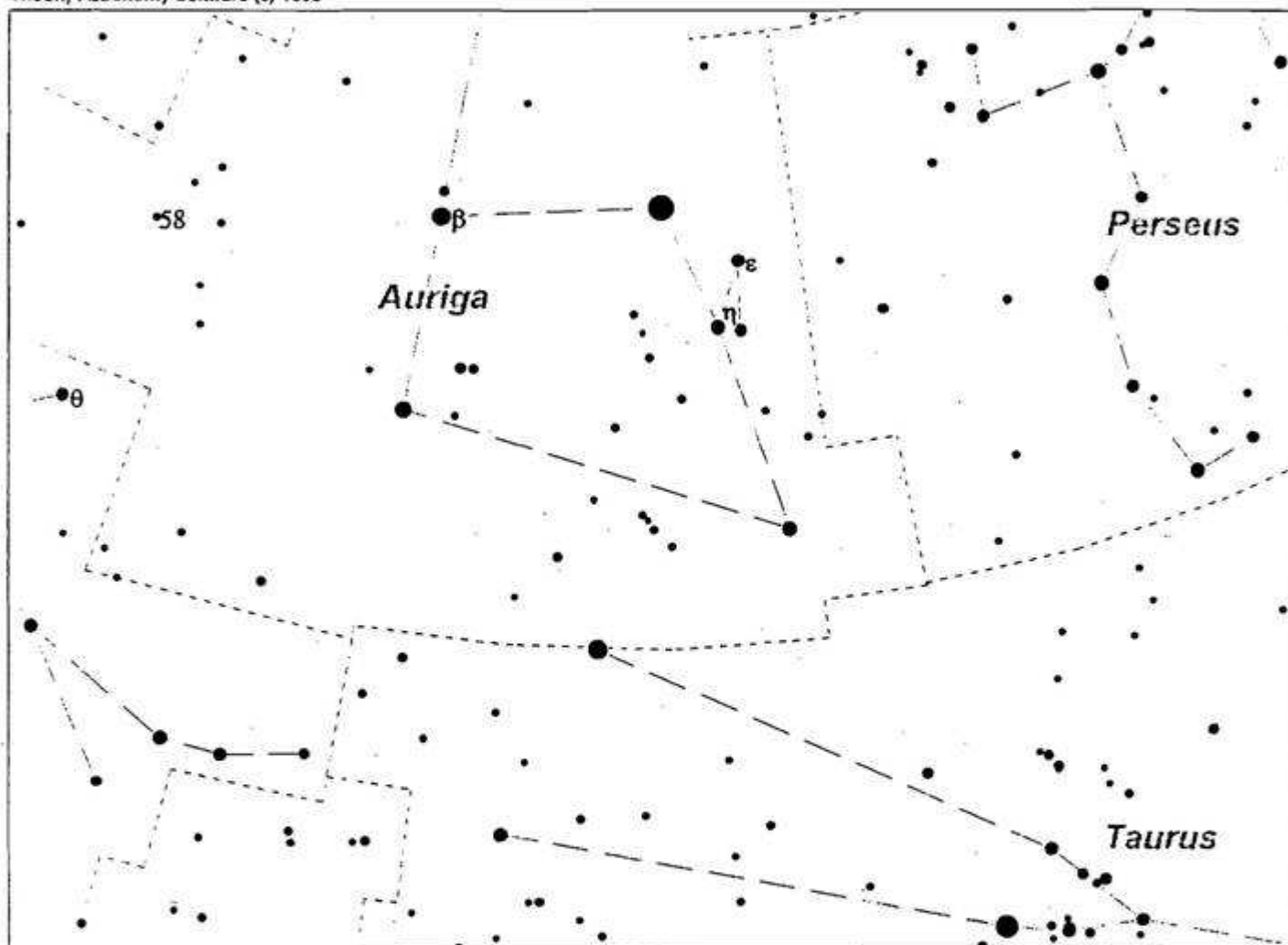
notes \_\_\_\_\_

ngc1931  
C/N MAG 11.5  
RA 5 31.4 DEC 34 15  
SA2000 5 URAN 97

from ngc1907 go  $.7^\circ$  E and  $1.1^\circ$  S to ngc1931

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



## AURIGA (continued)

ngc2126  
OC MAG 10.0  
RA 6 03.0 DEC 49 54  
SA2000 5 URAN 67

from  $\beta$  AUR go  $.6^\circ$  E and  $4.9^\circ$  N to ngc2126

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc2281  
OC MAG 5.5  
RA 6 49.3 DEC 41 04  
SA2000 5 URAN 67

from star 58 AUR go  $.3^\circ$  W and  $.7^\circ$  S to ngc2281

OR

from  $\theta$  GEM go  $.7^\circ$  W and  $7.1^\circ$  N to ngc2281

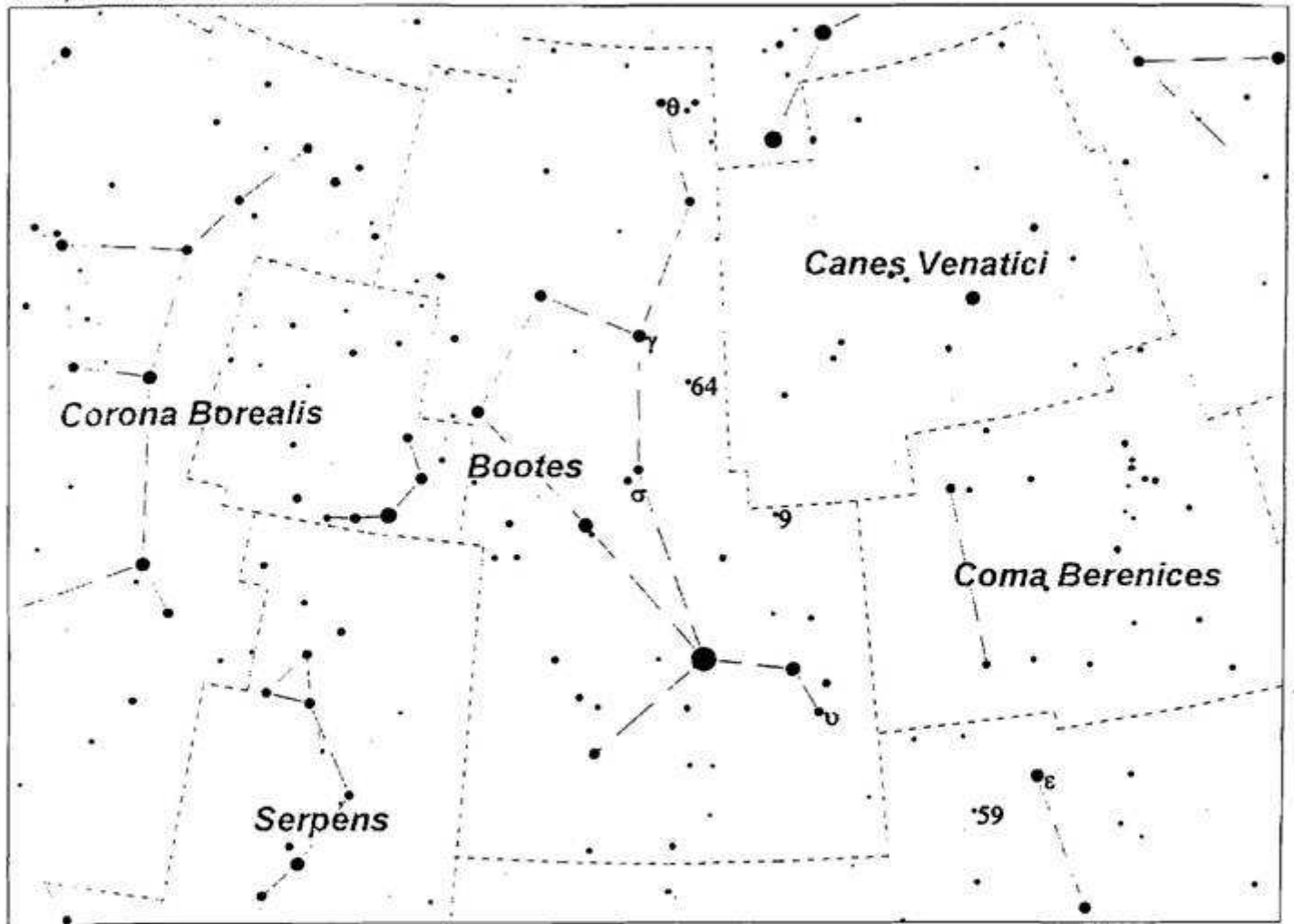
\*sug target 2419 Lyn\*

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*GEMINI SEARCH SEQUENCE BEGINS AT STAR 1 GEM\*

\*TAURUS SEARCH SEQUENCE BEGINS AT  $\alpha$  TAU\*



# BOOTES

ngc5248  
GX MAG 10.0  
RA 13 37.4 DEC 8 53  
SA2000 14 URAN 195

from  $\epsilon$  VIR go  $1.5^\circ$  S and  $3.6^\circ$  E to star 59 VIR  
then  
from star 59 VIR go  $.5^\circ$  S and  $5.1^\circ$  E to ngc5248  
OR  
from  $\upsilon$  BOO go  $2.9^\circ$  W and  $6.9^\circ$  S to ngc5248

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*SUG EASTERN VIRGO SEARCH SEQUENCE OR GO ON TO NGC5466\*

ngc5466  
GC MAG 9.0  
RA 14 05.5 DEC 28 32  
SA2000 7 URAN 110

from star 9 BOO go  $1.1^\circ$  N and  $1.9^\circ$  E to ngc5466  
OR  
from  $\sigma$  BOO go  $1.2^\circ$  S and  $6.4^\circ$  W to ngc5466

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc5557  
GX MAG 13.0  
RA 14 18.3 DEC 36 29  
SA2000 7 URAN 111

from star marked '64' BOO go  $.1^\circ$  E and  $1.0^\circ$  N to ngc5557  
OR  
from  $\gamma$  BOO go  $1.8^\circ$  S and  $2.7^\circ$  W to ngc5557

date \_\_\_\_\_ site \_\_\_\_\_

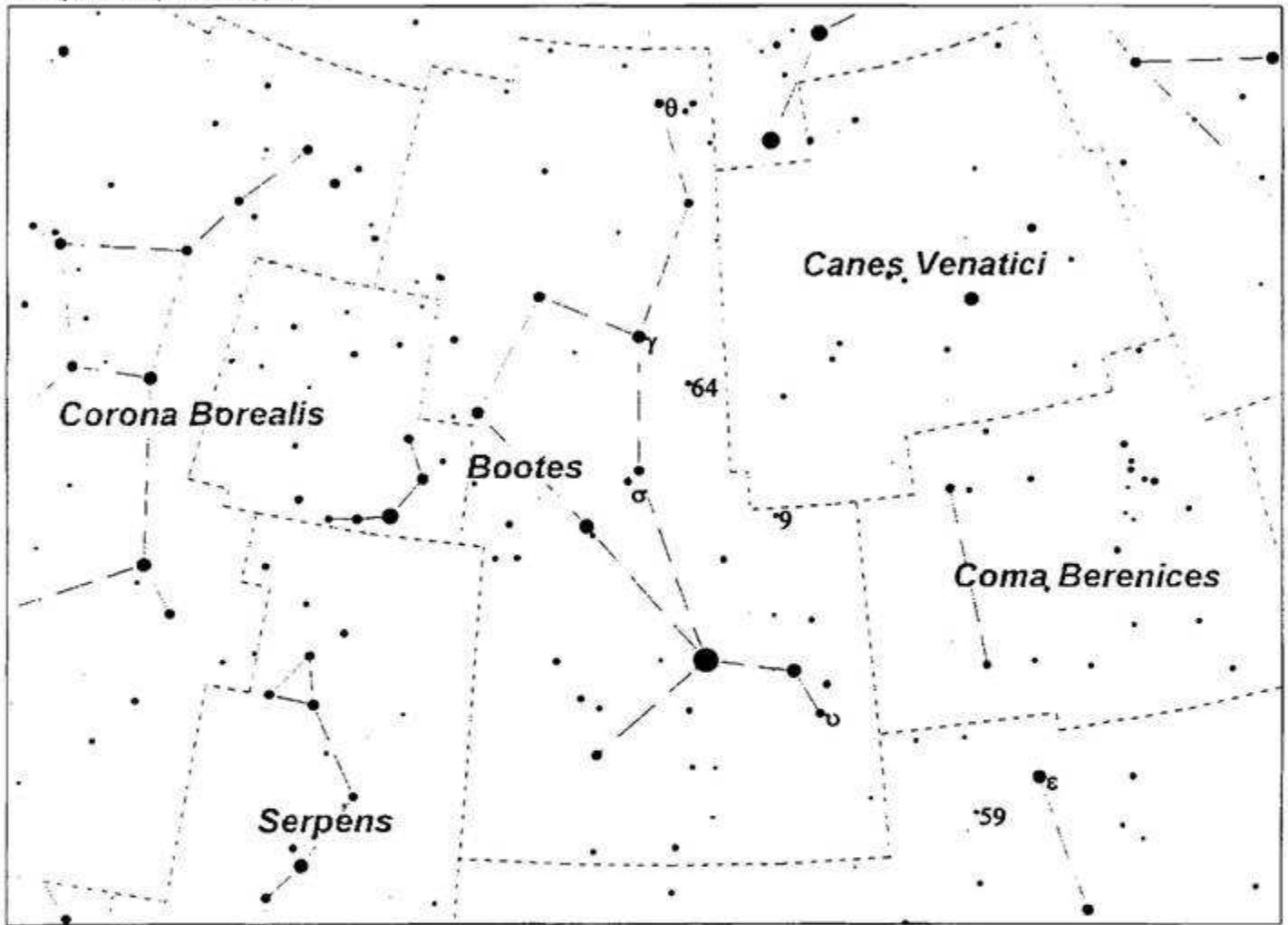
notes \_\_\_\_\_

ngc5676  
GX MAG 11.0  
RA 14 32.8 DEC 49 27  
SA2000 7 URAN 50

from  $\theta$  BOO go  $1.2^\circ$  E and  $2.4^\circ$  S to ngc5676

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_





**BOOTES** (continued)

ngc5689

GX MAG 12.0

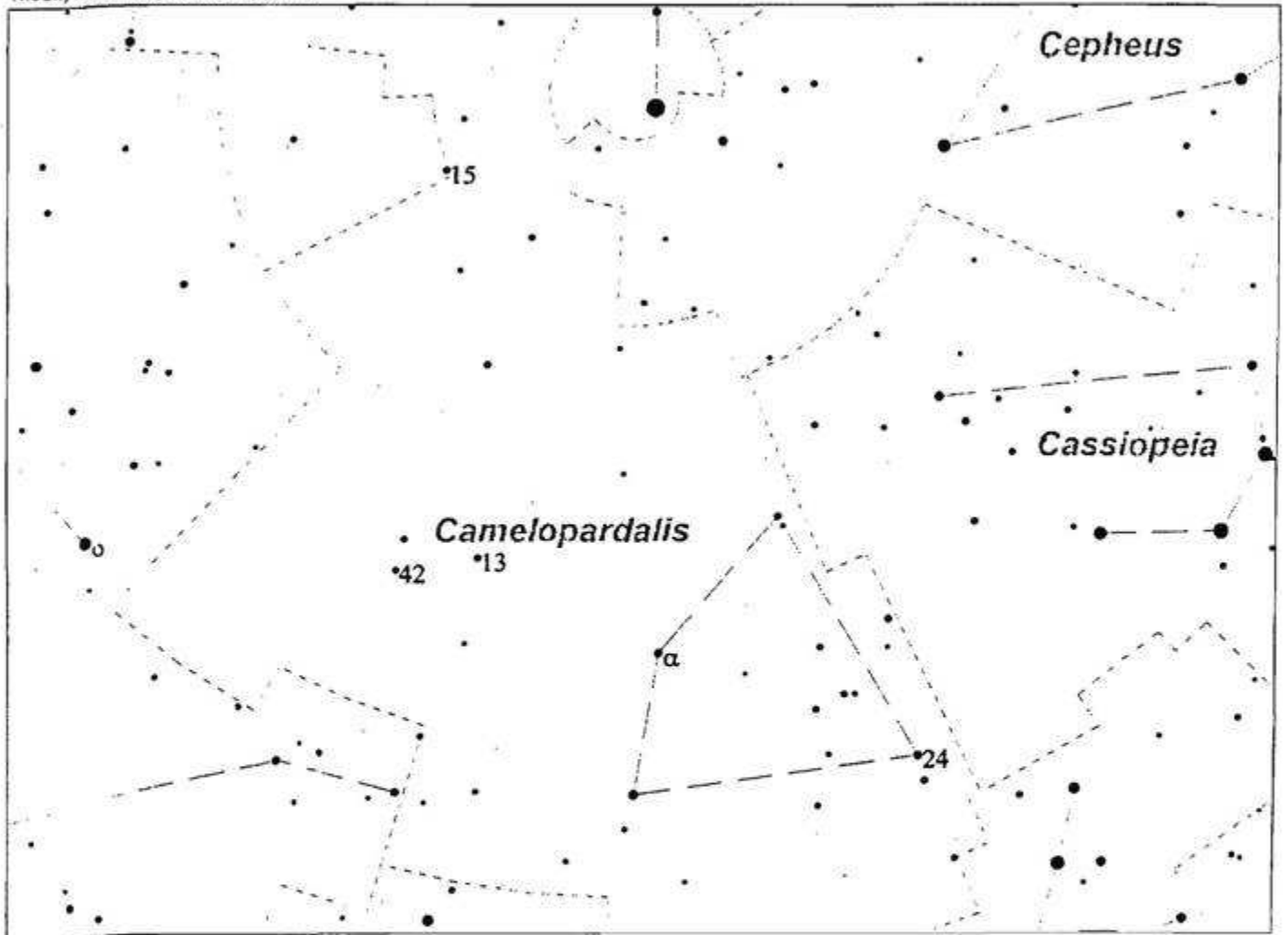
RA 14 35.5 DEC 48 44

SA2000 7 URAN 77

from ngc5676 go .5° E and .7° S to ngc5689

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



# CAMELOPARDALIS

ngc1501  
PN MAG 13.0  
RA 4 07.0 DEC 60 55  
SA2000 1 URAN 39

from star marked '24' CAM go  $1.0^{\circ}$  N and  $4.6^{\circ}$  E to ngc1501

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc1502  
OC MAG 5.5  
RA 4 07.7 DEC 62 20  
SA2000 1 URAN 18

from ngc1501 go  $.1^{\circ}$  E and  $1.4^{\circ}$  N to ngc1502

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc1961  
GX MAG 11.0  
RA 5 42.2 DEC 69 23  
SA2000 1 URAN 20

from star marked '13' CAM go  $3.2^{\circ}$  W to ngc1961

OR

from  $\alpha$  CAM go  $3.0^{\circ}$  N and  $4.2^{\circ}$  E to ngc1961

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc2403  
GX MAG 8.5  
RA 7 36.8 DEC 65 37  
SA2000 1 URAN 21

from ngc1961 go  $3.2^{\circ}$  E to star marked '13' CAM

then

from star marked '13' go  $1.8^{\circ}$  S and  $3.0^{\circ}$  E to star 42 CAM

then

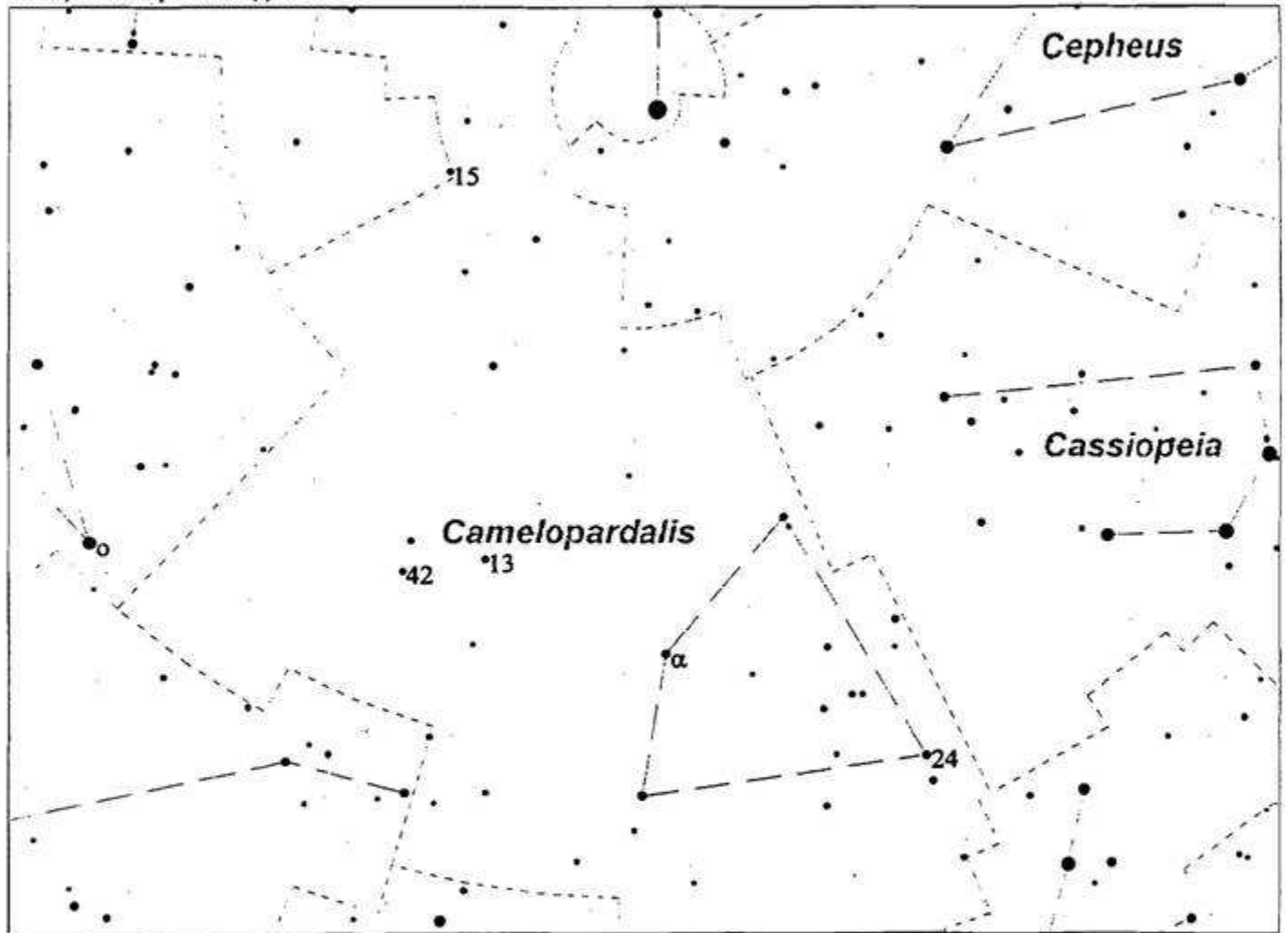
from star 42 CAM go  $1.9^{\circ}$  S and  $4.7^{\circ}$  E to ngc2403

OR

from  $\circ$  UMA go  $6.5^{\circ}$  W and  $4.8^{\circ}$  N to ngc2403

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



# CAMELOPARDALIS (continued)

ngc2655

GX MAG 10.0

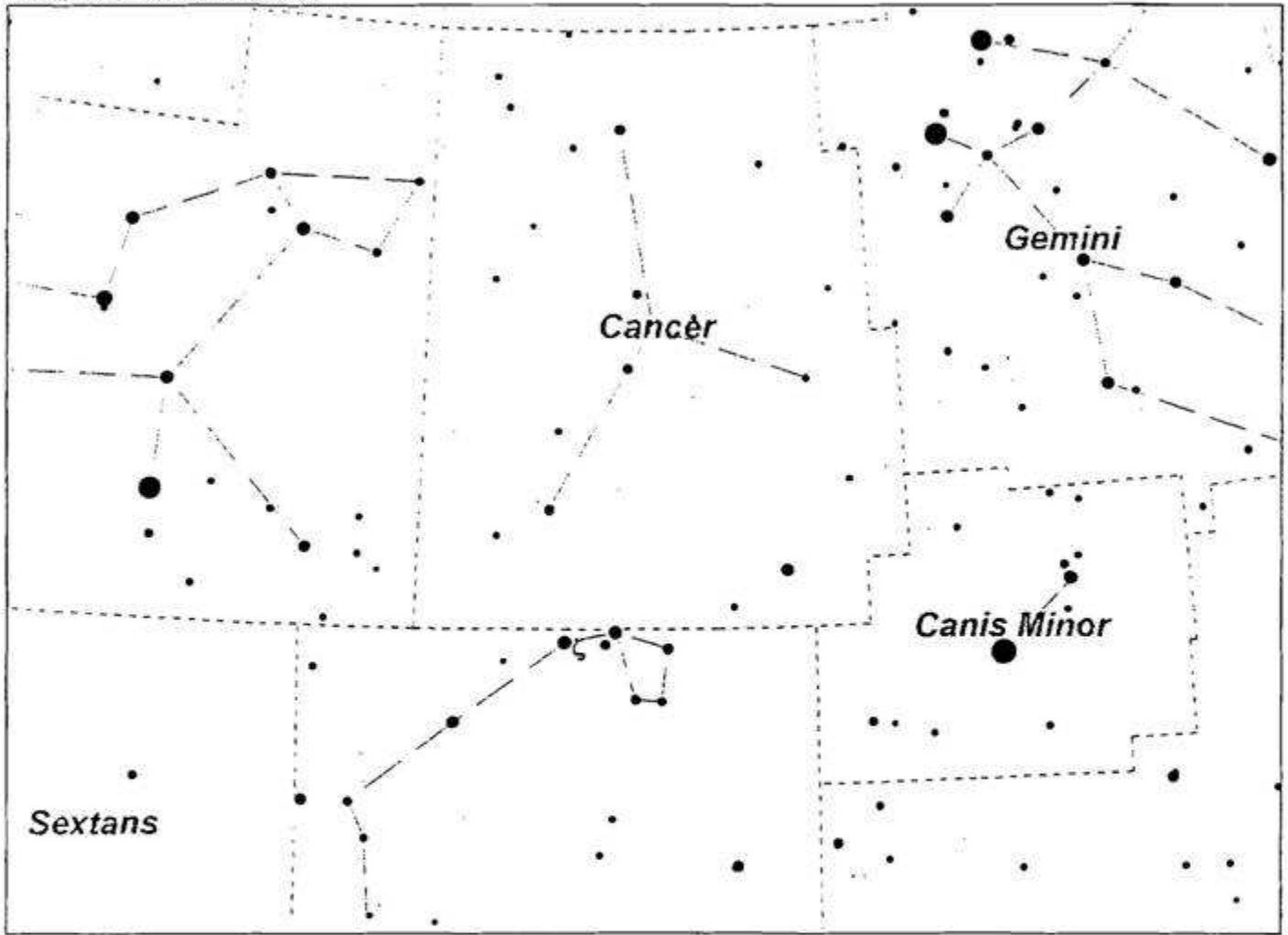
RA 8 55.4 DEC 78 13

SA2000 1 URAN 8/7

from star marked '15' go 1.6° W and 3.1° S to ngc2655

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_





# CANCER

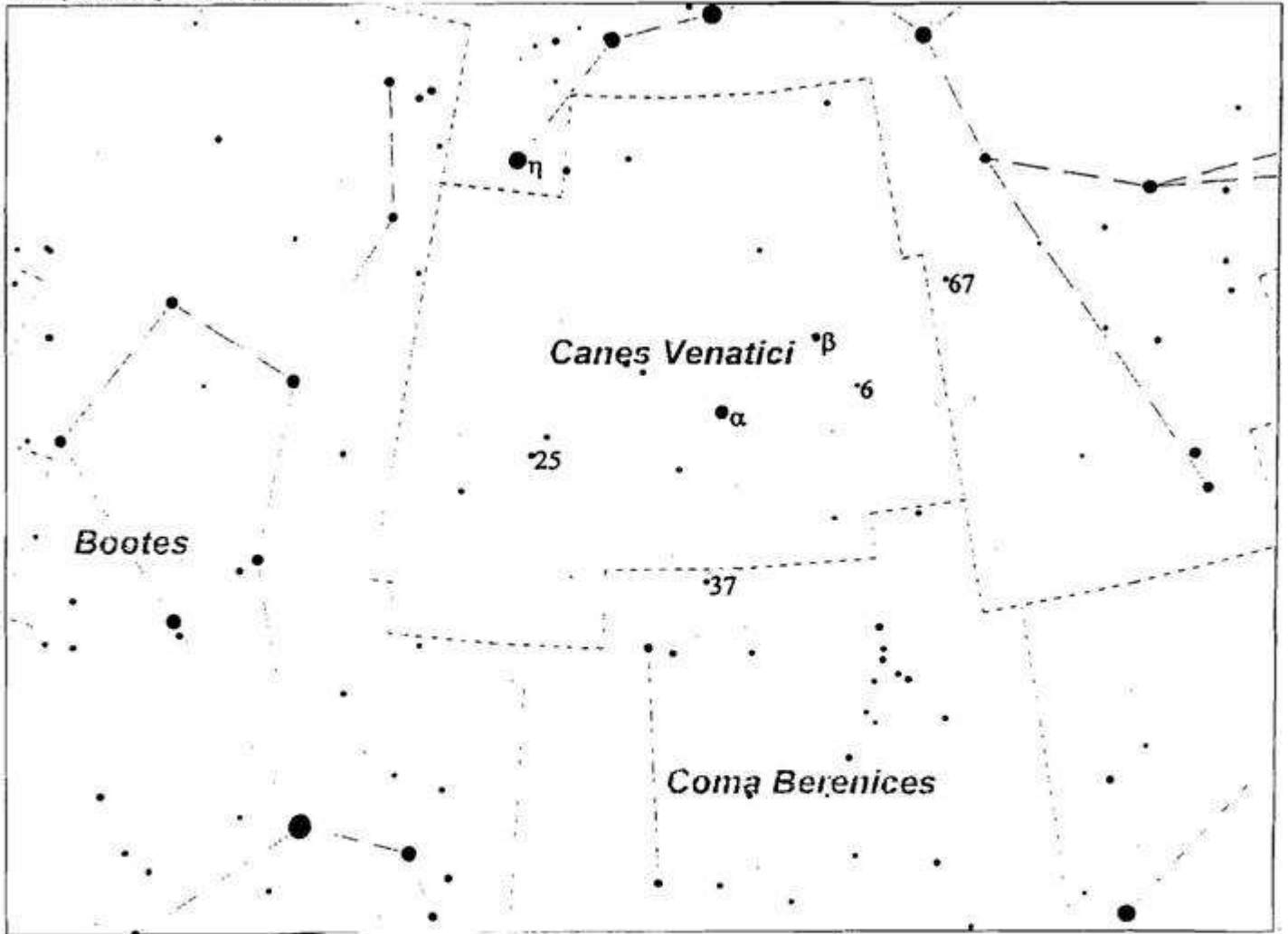
ngc2775  
GX MAG 10.5  
RA 9 10.3 DEC 7 03  
SA2000 12 URAN 187

from  $\zeta$  HYA go  $1.1^\circ$  N and  $3.7^\circ$  E to ngc2775

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*SEXTANS SEARCH SEQUENCE BEGINS AT  $\iota$  HYA\*  
\*HYDRA SEARCH SEQUENCE BEGINS AT  $\zeta$  MON\*



# CANES VENATICI

ngc4618  
GX MAG 11.0  
RA 12 41.5 DEC 41 10  
SA2000 7 URAN 75

from  $\beta$  CNV go  $.2^\circ$  S and  $1.5^\circ$  E to ngc4618

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4490  
GX MAG 10.0  
RA 12 30.6 DEC 41 39  
SA2000 7 URAN 75

ngc4490 lies  $.3^\circ$  N and  $.6^\circ$  W of  $\beta$  CNV

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4485  
GX MAG 12.0  
RA 12 30.5 DEC 41 43  
SA2000 7 URAN 75

ngc4485 lies  $.1^\circ$  N of ngc4490

date \_\_\_\_\_ site \_\_\_\_\_

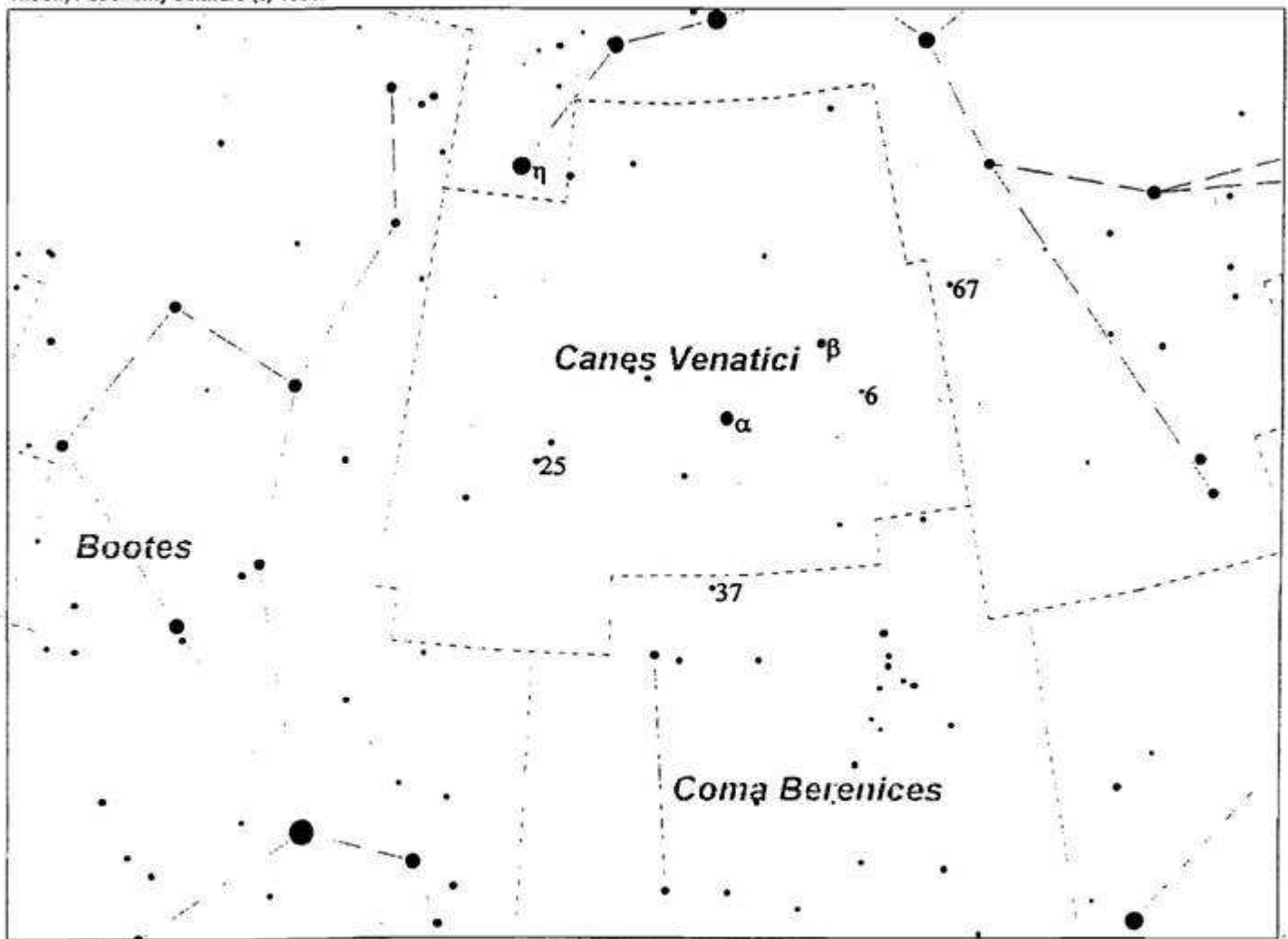
notes \_\_\_\_\_

ngc4449  
GX MAG 9.5  
RA 12 28.2 DEC 44 06  
SA2000 7 URAN 75

from ngc4485 go  $.4^\circ$  W and  $2.4^\circ$  N to ngc4449

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



# CANES VENATICI (continued)

ngc4346

GX MAG 12.0

RA 12 23.4 DEC 47 00

SA2000 7 URAN 75

from ngc4449 go  $.8^{\circ}$  W and  $2.9^{\circ}$  N to ngc4346

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4258 (m106)

GX MAG 8.5

RA 12 18.9 DEC 47 19

SA2000 7 URAN 75

from ngc4346 go  $.3^{\circ}$  N and  $.8^{\circ}$  W to ngc4258

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4111

GX MAG 11.0

RA 12 07.1 DEC 43 05

SA2000 7 URAN 74

from star 67 UMA go  $.9^{\circ}$  E to ngc4111

OR

from  $\beta$  CNV go  $1.7^{\circ}$  N and  $4.8^{\circ}$  W to ngc4111

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4143

GX MAG 12.0

RA 12 09.7 DEC 42 33

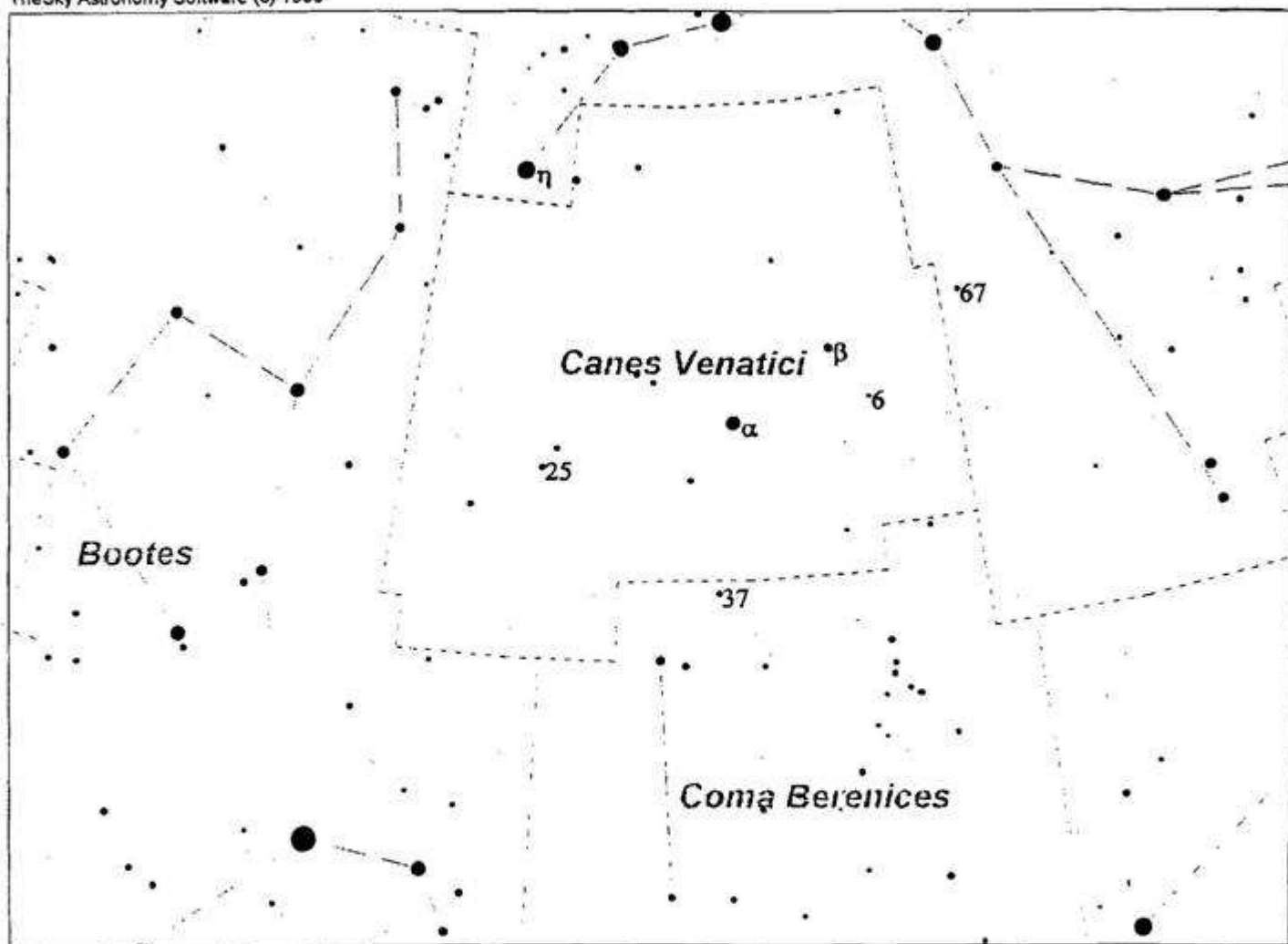
SA2000 7 URAN 74

from ngc4111 go  $.4^{\circ}$  E and  $.5^{\circ}$  S to ngc4143

\*sug targets 3938 and 4051 UMa\*

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



## CANES VENATICI (continued)

ngc4151  
GX MAG 10.5  
RA 12 10.6 DEC 39 25  
SA2000 7 URAN 74

from ngc4143 go  $.2^{\circ}$  E and  $3.1^{\circ}$  S to ngc4151  
OR  
from  $\beta$  CNV go  $1.5^{\circ}$  W and  $2.3^{\circ}$  S to star 6 CNV  
then  
from star 6 CNV go  $.4^{\circ}$  N and  $3.0^{\circ}$  W to ngc4151

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4214  
GX MAG 10.0  
RA 12 15.7 DEC 36 20  
SA2000 7 URAN 107

from ngc4151 go  $1.0^{\circ}$  E and  $3.1^{\circ}$  S to ngc4214  
OR  
from  $\beta$  CNV go  $1.5^{\circ}$  W and  $2.3^{\circ}$  S to star 6 CNV  
then  
from star 6 CNV go  $2.0^{\circ}$  W and  $2.7^{\circ}$  S to ngc4214

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*COMA BERENICES SEARCH SEQUENCE BEGINS AT  $\gamma$  COM OR  
GO ON TO NGC4631\*

ngc4631  
GX MAG 9.5  
RA 12 42.1 DEC 32 33  
SA2000 7 URAN 108

from star 37 COM go  $1.8^{\circ}$  N and  $3.8^{\circ}$  W to ngc4631  
OR  
from  $\alpha$  CNV go  $2.7^{\circ}$  W and  $5.8^{\circ}$  S to ngc 4631

date \_\_\_\_\_ site \_\_\_\_\_

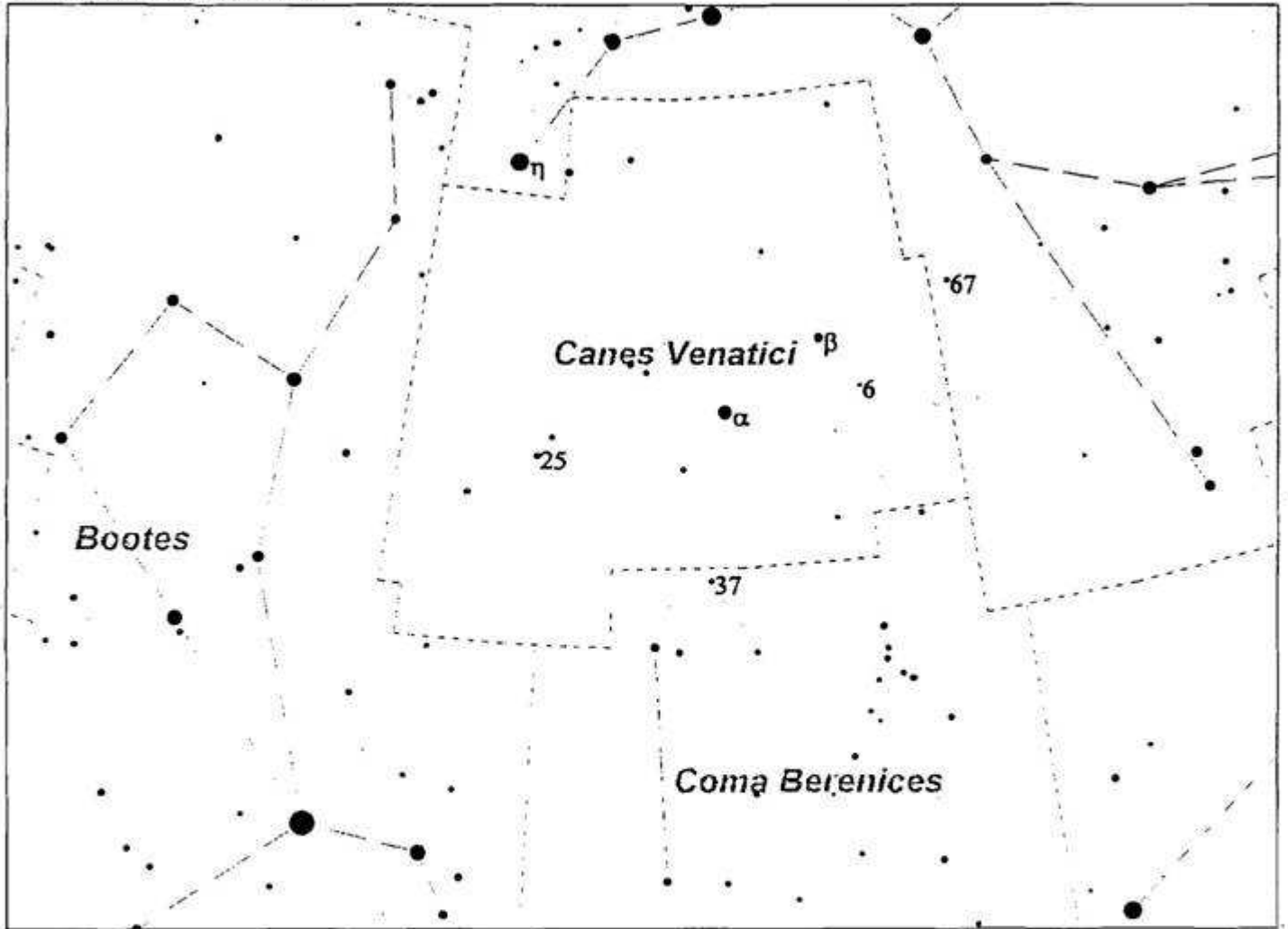
notes \_\_\_\_\_

ngc4656  
GX MAG 11.0  
RA 12 43.9 DEC 32 11  
SA2000 7 URAN 108

ngc4656 lies  $.4^{\circ}$  E and  $.4^{\circ}$  S of ngc4631

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_





## CANES VENATICI (continued)

ngc5005  
GX MAG 10.5  
RA 13 11.0 DEC 37 03  
SA2000 7 URAN 109

from  $\alpha$  CNV go  $1.3^\circ$  S and  $3.0^\circ$  E to ngc5005

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc5033  
GX MAG 10.0  
RA 13 13.5 DEC 36 36  
SA2000 7 URAN 109

ngc5033 lies  $.5^\circ$  E and  $.4^\circ$  S of ngc5005

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc5273  
GX MAG 11.5  
RA 13 42.1 DEC 35 38  
SA2000 7 URAN 109

from ngc5033 go  $.3^\circ$  S and  $4.8^\circ$  E to star 25 CNV  
then  
from star 25 CNV go  $.7^\circ$  S and  $.9^\circ$  E to ngc5273  
\*sug targets 5466 and 5557 Boo\*

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc5195  
GX MAG 9.5  
RA 13 30.1 DEC 47 16  
SA2000 7 URAN 76

from  $\eta$  UMA go  $2.1^\circ$  S and  $3.0^\circ$  W to m51  
ngc5195 lies at the northern edge of m51  
\*sug targets 5676 and 5689 Boo\*

date \_\_\_\_\_ site \_\_\_\_\_

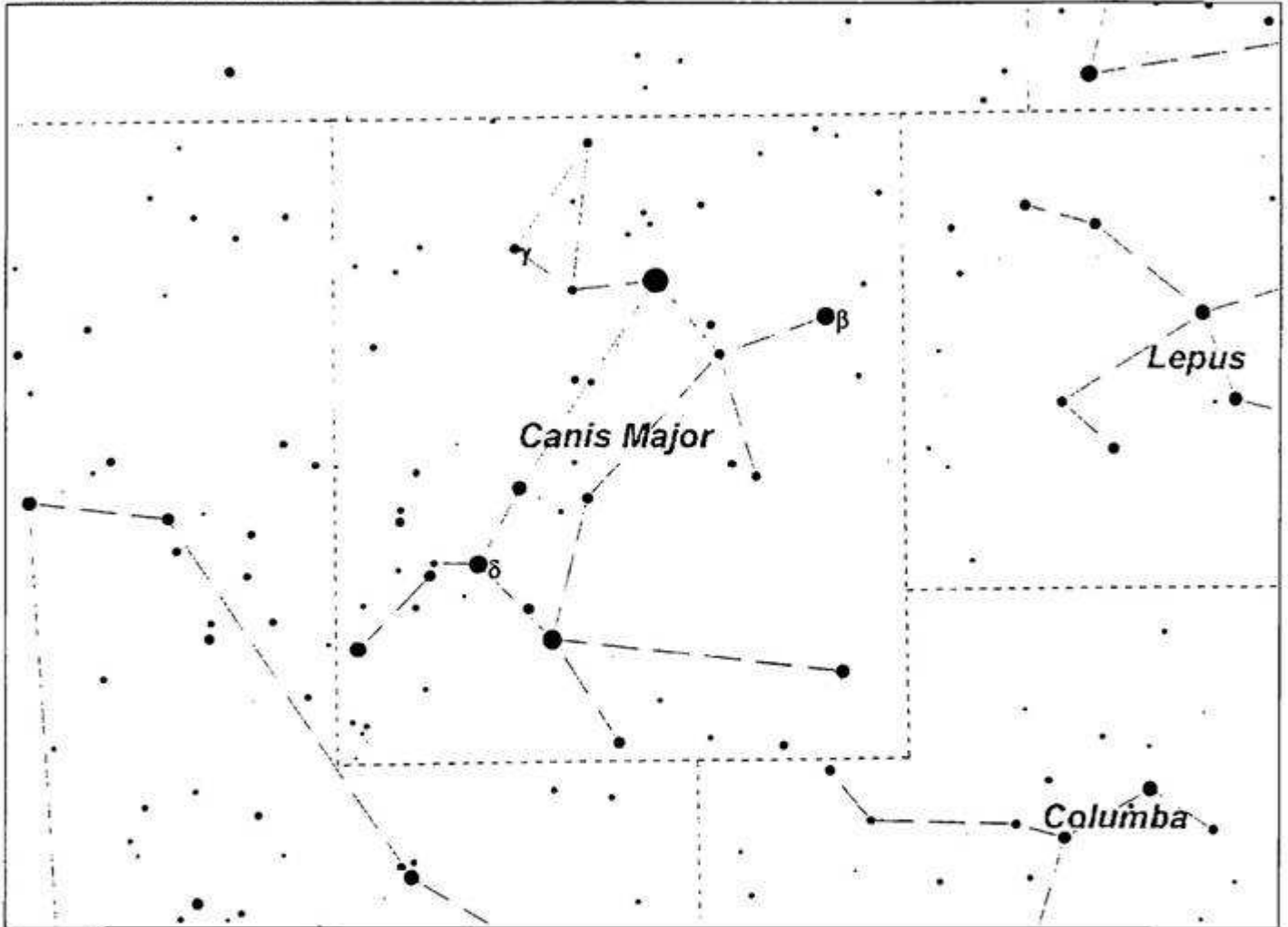
notes \_\_\_\_\_

ngc4800  
GX MAG 12.0  
RA 12 54.5 DEC 46 32  
SA2000 7 URAN 75

from m51 go  $.7^\circ$  S and  $6.1^\circ$  W to ngc4800

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



# CANIS MAJOR

\*SOUTHERN DECLINATION ADVISORY\*

ngc2204  
OC MAG 8.5  
RA 6 15.7 DEC -18 39  
SA2000 19 URAN 317

from  $\beta$  CMA go  $.7^\circ$  S and  $1.7^\circ$  W to ngc2204  
\*sug target 1964 Lep\*

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc2354  
OC MAG 6.5  
RA 7 14.3 DEC -25 44  
SA2000 19 URAN 319

from  $\delta$  CMA go  $.6^\circ$  N and  $1.3^\circ$  E to ngc2354

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc2362  
OC MAG 4.0  
RA 7 18.8 DEC -24 57  
SA2000 19 URAN 319

from ngc2354 go  $.8^\circ$  N and  $1.0^\circ$  E to ngc2362

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

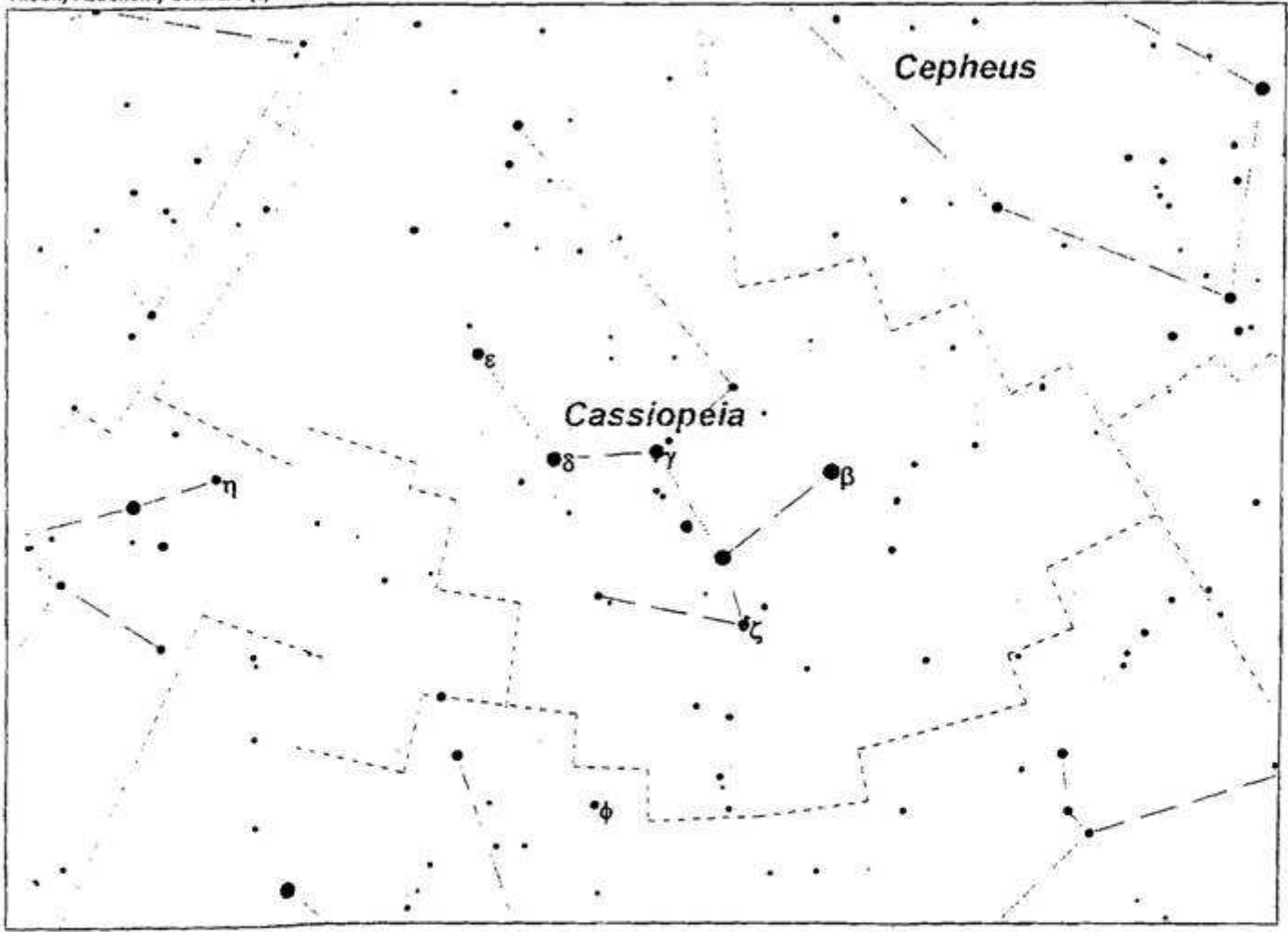
ngc2360  
OC MAG 7.0  
RA 7 17.8 DEC -15 37  
SA2000 19 URAN 273/274

from  $\gamma$  CMA go  $3.4^\circ$  E to ngc2360

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*PUPPIS SEARCH SEQUENCE BEGINS AT  $\gamma$  CMA\*



# CASSIOPEIA

ngc278  
GX MAG 11.0  
RA 0 52.0 DEC 47 33  
SA2000 4 URAN 60

from  $\phi$  AND go  $.3^\circ$  N and  $2.9^\circ$  W to ngc278

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc185  
GX MAG 9.0  
RA 0 39.0 DEC 48 20  
SA2000 4 URAN 60

from ngc278 go  $.8^\circ$  N and  $2.2^\circ$  W to ngc185  
OR  
from  $\zeta$  CAS go  $.3^\circ$  E and  $5.6^\circ$  S to ngc185

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc7790  
OC MAG 8.0  
RA 23 58.4 DEC 61 13  
SA2000 1 URAN 35

from  $\beta$  CAS go  $1.4^\circ$  W and  $2.1^\circ$  N to ngc7790

date \_\_\_\_\_ site \_\_\_\_\_

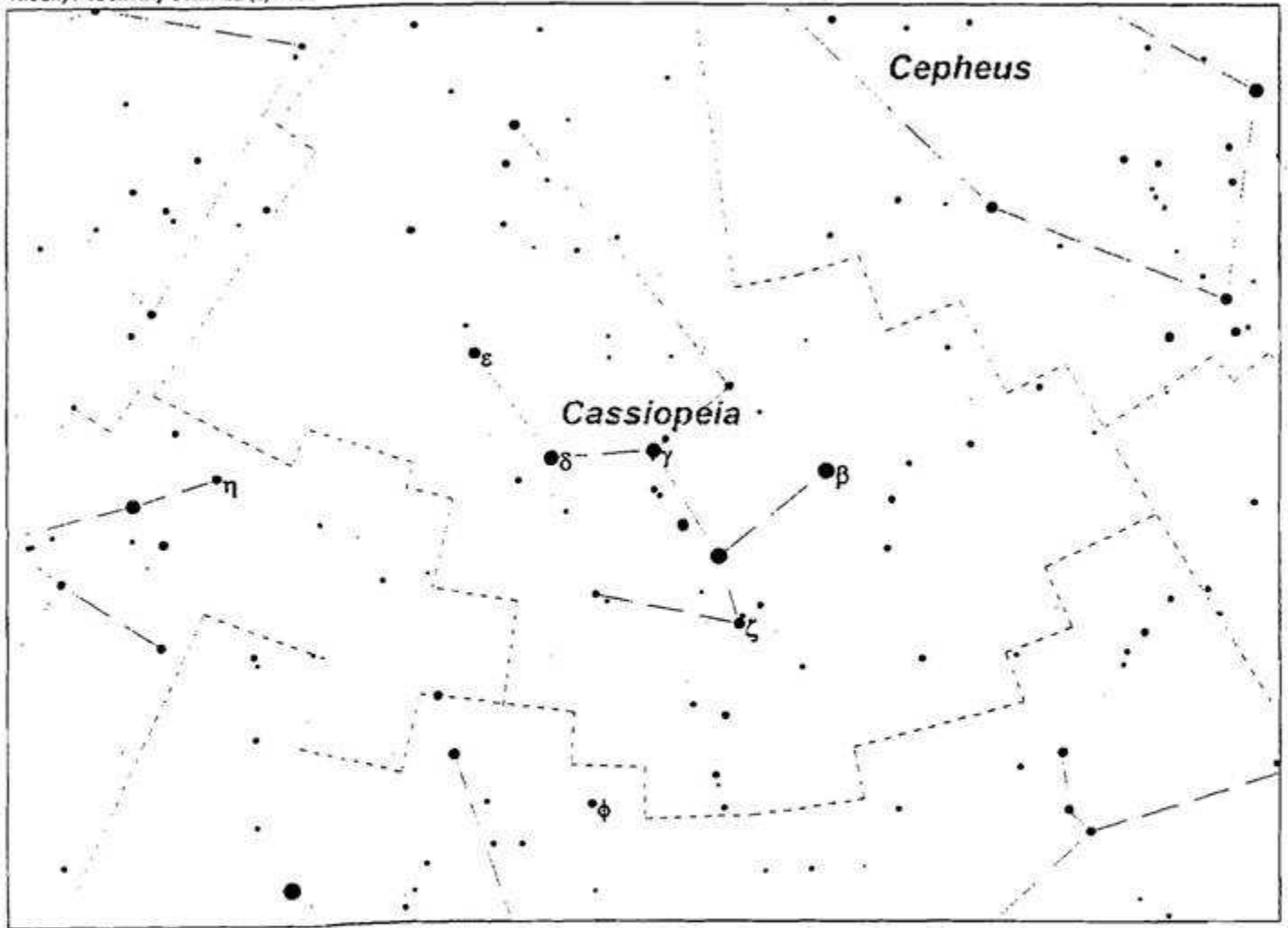
notes \_\_\_\_\_

ngc7789  
OC MAG 8.5  
RA 23 57.0 DEC 65 44  
SA2000 1 URAN 35

from ngc7790 go  $.2^\circ$  W and  $4.5^\circ$  S to ngc7789  
OR  
from  $\beta$  CAS go  $1.5^\circ$  W and  $2.4^\circ$  S to ngc7789

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



## CASSIOPEIA (continued)

ngc225  
OC MAG 7.0  
RA 0 43.4 DEC 61 47  
SA2000 1 URAN 36

from  $\gamma$  CAS go  $1.1^\circ$  N and  $1.6^\circ$  W to ngc225

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc136  
OC MAG 10.5  
RA 0 31.5 DEC 61 32  
SA2000 1 URAN 36

from ngc225 go  $.2^\circ$  S and  $1.4^\circ$  W to ngc136

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc129  
OC MAG 6.5  
RA 0 29.9 DEC 60 14  
SA2000 1 URAN 36

from ngc136 go  $.2^\circ$  W and  $1.3^\circ$  S to ngc129

OR

from  $\beta$  CAS go  $1.1^\circ$  N and  $2.6^\circ$  E to ngc129

date \_\_\_\_\_ site \_\_\_\_\_

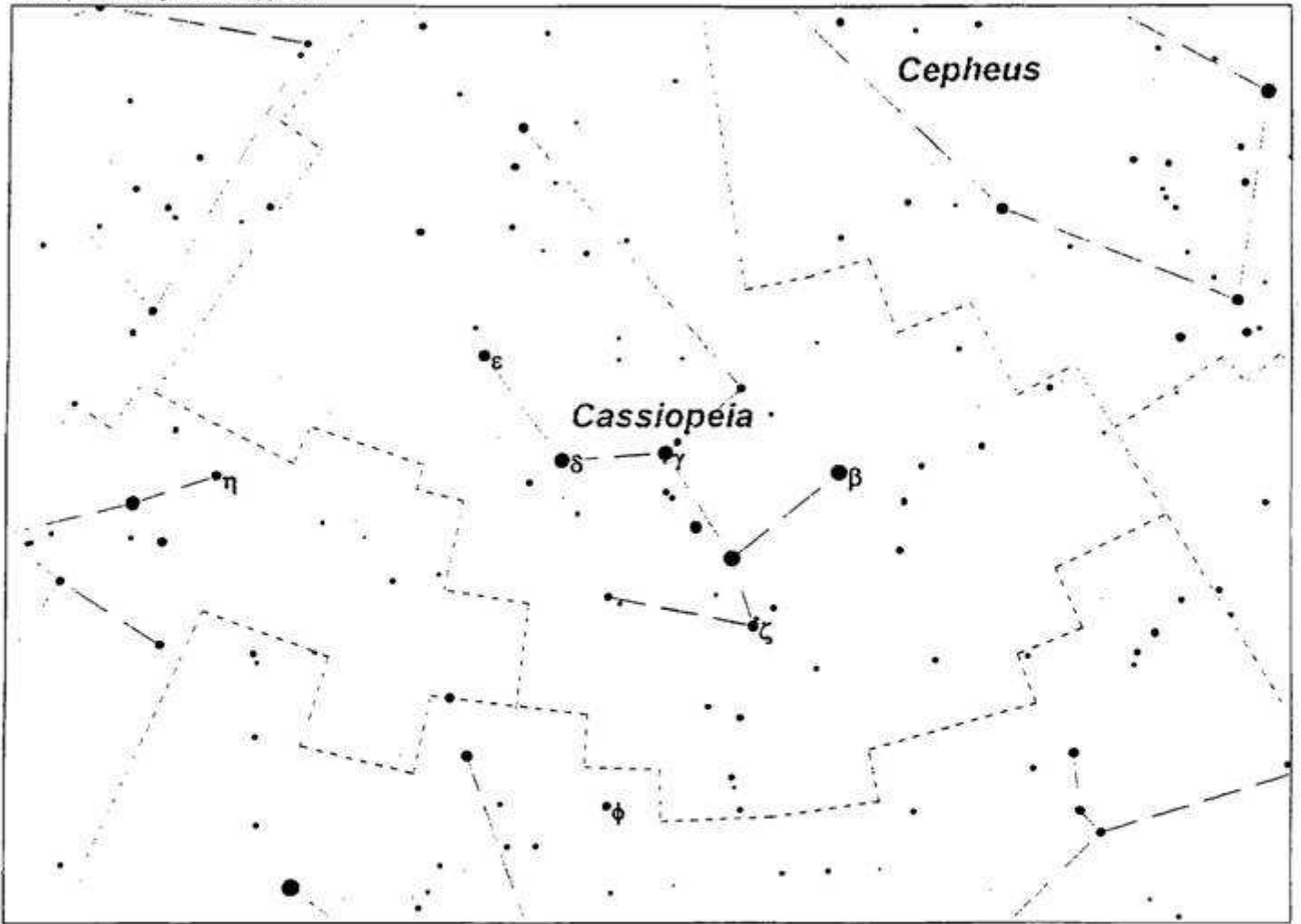
notes \_\_\_\_\_

ngc381  
OC MAG 9.0  
RA 1 08.3 DEC 61 35  
SA2000 1 URAN 36

from  $\gamma$  CAS go  $.8^\circ$  N and  $1.4^\circ$  E to ngc381

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_





## CASSIOPEIA (continued)

ngc457  
OC MAG 6.5  
RA 1 19.1 DEC 58 20  
SA2000 1 URAN 36

from ngc381 go 1.3° E and 3.2° S to ngc457  
OR  
from δ CAS go .8° W and 1.9° S to ngc457

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc436  
OC MAG 9.0  
RA 1 15.6 DEC 58 49  
SA2000 1 URAN 36

ngc436 lies .5° W and .5° N of ngc457

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc659  
OC MAG 8.0  
RA 1 44.2 DEC 60 42  
SA2000 1 URAN 37

from δ CAS go .5° N and 2.2° E to ngc659

date \_\_\_\_\_ site \_\_\_\_\_

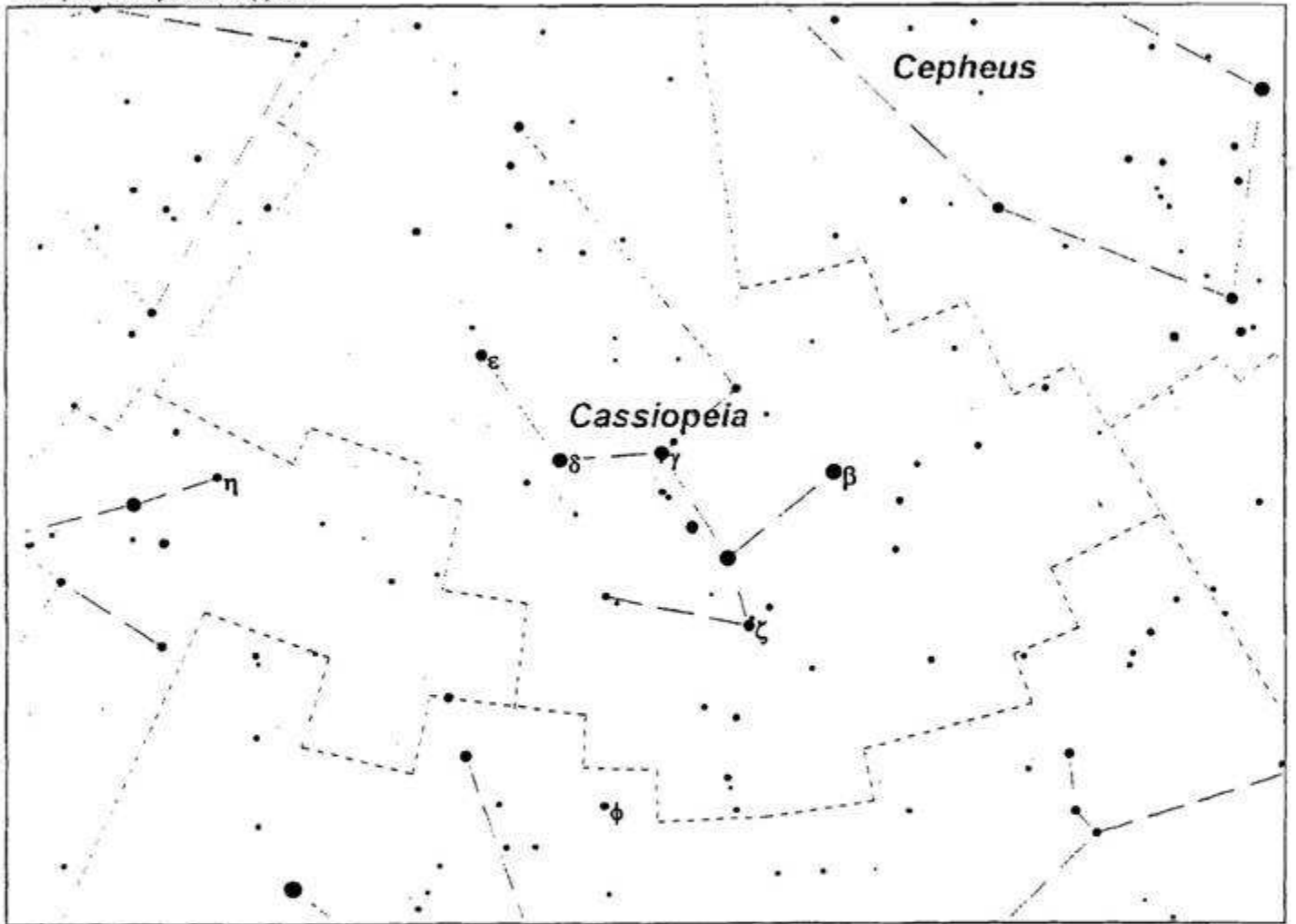
notes \_\_\_\_\_

ngc663  
OC MAG 7.0  
RA 1 46.0 DEC 61 15  
SA2000 1 URAN 37

from ngc659 go .2° E and .5° N to ngc663

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



# CASSIOPEIA (continued)

ngc654  
OC MAG 6.5  
RA 1 44.1 DEC 61 53  
SA2000 1 URAN 37

from ngc663 go .2° W and .6° N to ngc654

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc637  
OC MAG 8.0  
RA 1 42.9 DEC 64 00  
SA2000 1 URAN 16

from ngc654 go .1° W and 2.1° N to ngc637

OR

from ε CAS go .3° N and 1.3° W to ngc637

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc559  
OC MAG 9.0  
RA 1 29.5 DEC 63 18  
SA2000 1 URAN 16

from ngc637 go .7° S and 1.5° W to ngc559

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc1027  
OC MAG 7.0  
RA 2 42.7 DEC 61 33  
SA2000 1 URAN 17

from η PER go 1.1° W and 5.6° N to ngc1027

OR

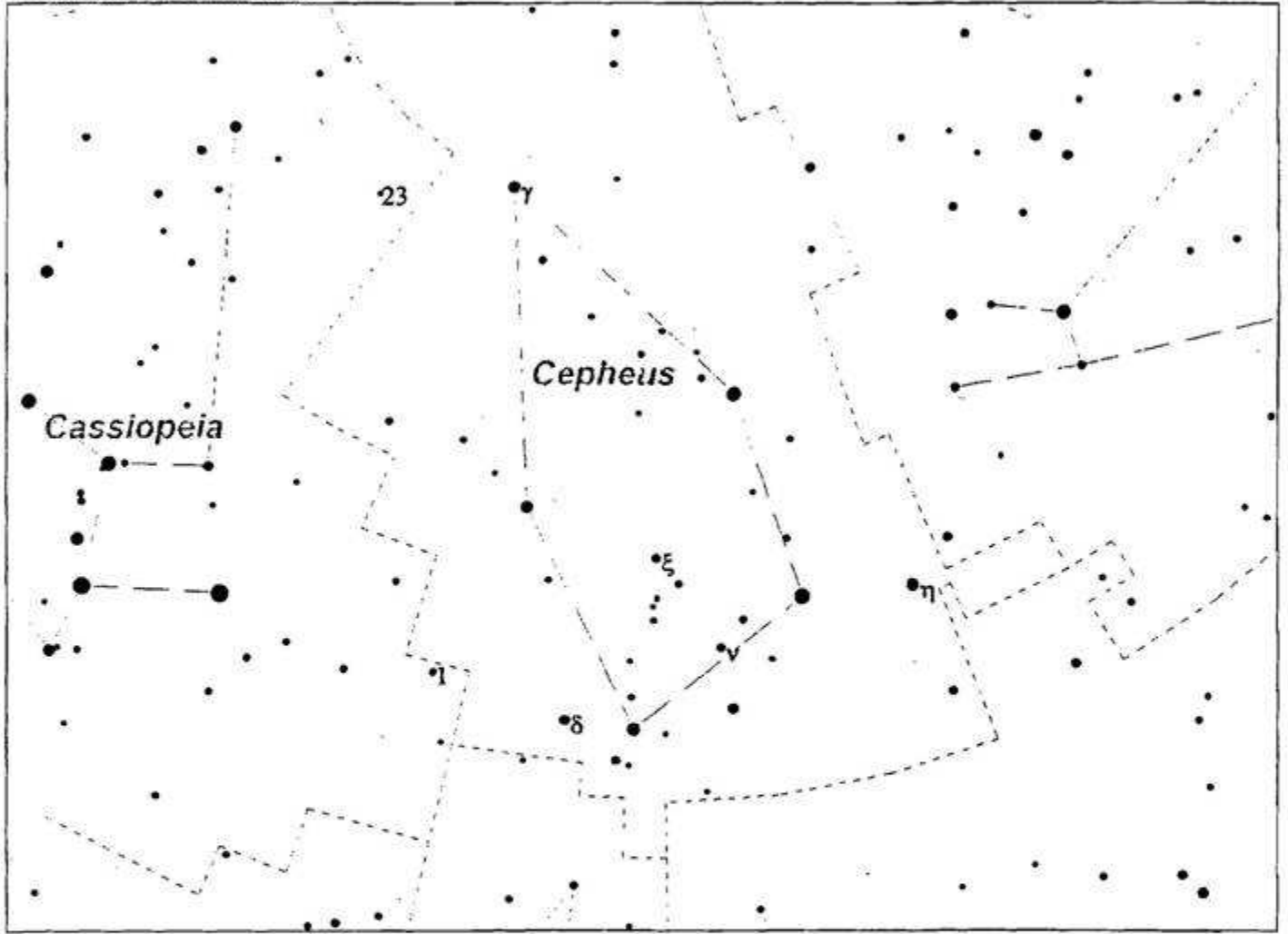
from ε CAS go 2.1° S and 5.7° E to ngc1027

\*sug targets 884 and 869 Per\*

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*PERSEUS SEARCH SEQUENCE BEGINS AT φ PER\*



## CEPHEUS

ngc6939  
OC MAG 8.0  
RA 20 31.4 DEC 60 38  
SA2000 3 URAN 32

from  $\eta$  CEP go  $1.2^\circ$  S and  $1.7^\circ$  W to ngc6939

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc6946  
GX MAG 9.0  
RA 20 34.8 DEC 60 09  
SA2000 3 URAN 32

from ngc6939 go  $.4^\circ$  E and  $.5^\circ$  S to ngc6946

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc7142  
OC MAG 9.5  
RA 21 45.9 DEC 65 48  
SA2000 3 URAN 33

from  $\xi$  CEP go  $1.2^\circ$  N and  $1.8^\circ$  W to ngc7142

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc7160  
OC MAG 6.0  
RA 21 53.7 DEC 62 36  
SA2000 3 URAN 33

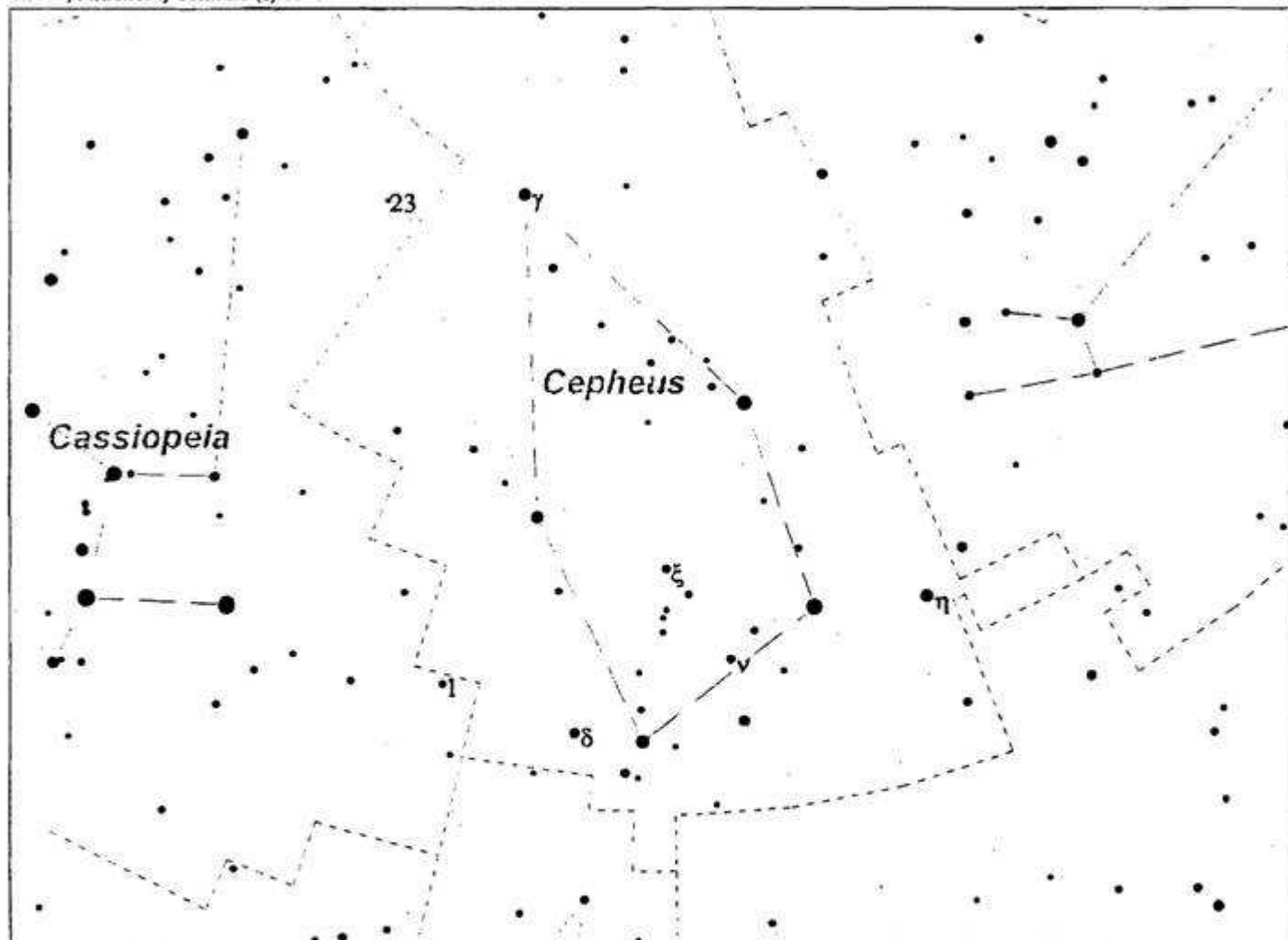
from ngc7142 go  $.8^\circ$  E and  $3.2^\circ$  S to ngc7160

OR

from  $\nu$  CEP go  $.9^\circ$  E and  $1.5^\circ$  N to ngc7160

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



# CEPHEUS (continued)

ngc7380  
C/N MAG 7.5  
RA 22 47.0 DEC 58 06  
SA2000 3 URAN 58

from  $\delta$  CEP go  $.3^\circ$  S and  $2.3^\circ$  E to ngc7380

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc7510  
OC MAG 8.0  
RA 23 11.5 DEC 60 34  
SA2000 3 URAN 58

from ngc7380 go  $1.3^\circ$  N and  $2.5^\circ$  E to star 1 CAS  
then  
from star 1 CAS go  $.6^\circ$  E and  $1.1^\circ$  N to ngc7510

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

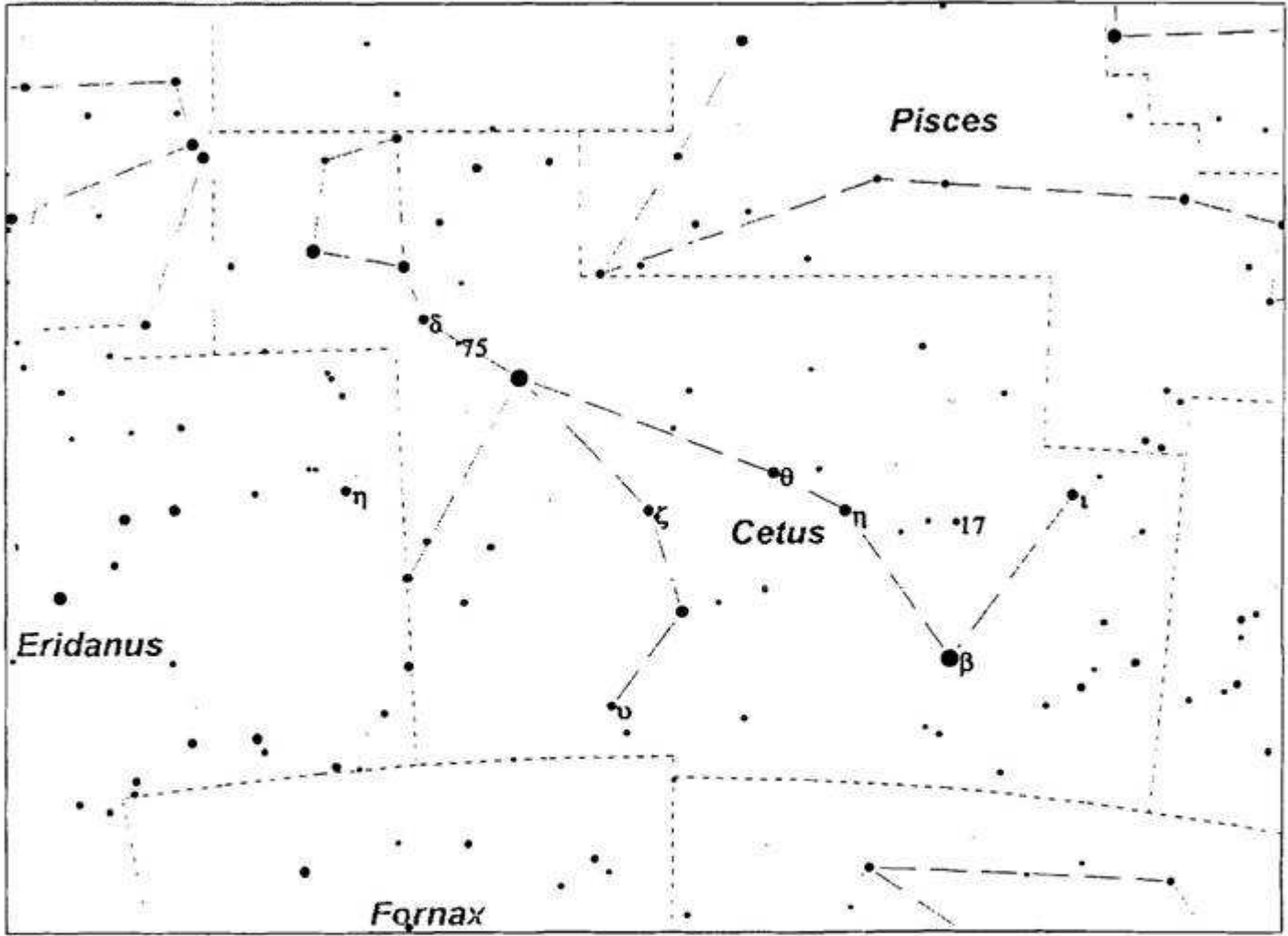
ngc40  
PN MAG 10.5  
RA 0 13.0 DEC 72 32  
SA2000 3 URAN 3

from  $\gamma$  CEP go  $1.8^\circ$  E and  $5.1^\circ$  S to ngc40  
OR  
from star 23 CAS go  $2.2^\circ$  W and  $2.3^\circ$  S to ngc40

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*LACERTA SEARCH SEQUENCE BEGINS AT  $\rho$  CYG\*  
\*ANDROMEDA SEARCH SEQUENCE BEGINS AT  $\lambda$  AND\*





# CETUS

\*SOUTHERN DECLINATION ADVISORY\*

**ngc246**  
PN MAG 8.0  
RA 0 47.0 DEC -12 07  
SA2000 10 URAN 262

from  $\eta$  CET go 1.7° S and 5.3° W to ngc246  
OR  
from star 17 CET go .7° E and 1.3° S to ngc246

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

**ngc157**  
GX MAG 10.5  
RA 0 34.9 DEC -8 24  
SA2000 10 URAN 261

from ngc246 go 3.0° W and 3.4° N to ngc157  
OR  
from  $\iota$  CET go .4° N and 3.8° E to ngc157

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

**ngc247**  
GX MAG 9.0  
RA 0 47.0 DEC -20 45  
SA2000 18 URAN 306

from  $\beta$  CET go .8° E and 2.8° S to ngc247

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

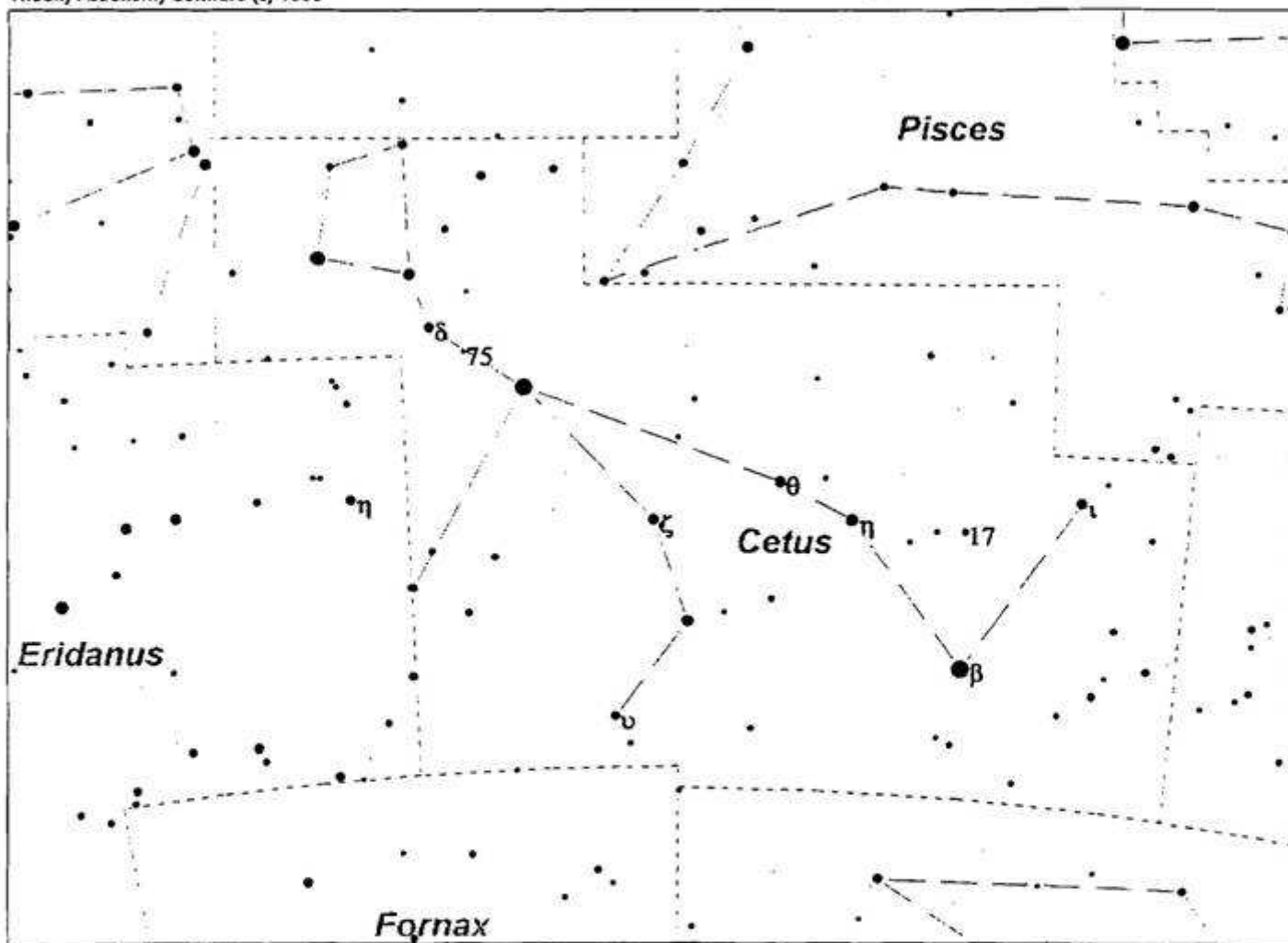
\*SUG SCULPTOR SEARCH SEQUENCE OR GO ON TO NGC908\*

**ngc908**  
GX MAG 10.0  
RA 2 23.1 DEC -21 13  
SA2000 18 URAN 309

from  $\upsilon$  CET go .2° S and 5.4° E to ngc908

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



## CETUS (continued)

ngc584  
GX MAG 10.5  
RA 1 31.3 DEC -6 51  
SA2000 10 URAN 263

from  $\theta$  CET go  $1.3^\circ$  N and  $1.8^\circ$  E to ngc584

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc596  
GX MAG 11.0  
RA 1 32.8 DEC -7 01  
SA2000 10 URAN 263

ngc596 lies  $.2^\circ$  S and  $.4^\circ$  E of ngc584

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc615  
GX MAG 11.5  
RA 1 35.1 DEC -7 19  
SA2000 10 URAN 263

ngc615 lies  $.3^\circ$  S and  $.5^\circ$  E of ngc596

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc779  
GX MAG 11.0  
RA 1 59.7 DEC -5 58  
SA2000 10 URAN 264

from  $\zeta$  CET go  $2.0^\circ$  E and  $4.3^\circ$  N to ngc779

date \_\_\_\_\_ site \_\_\_\_\_

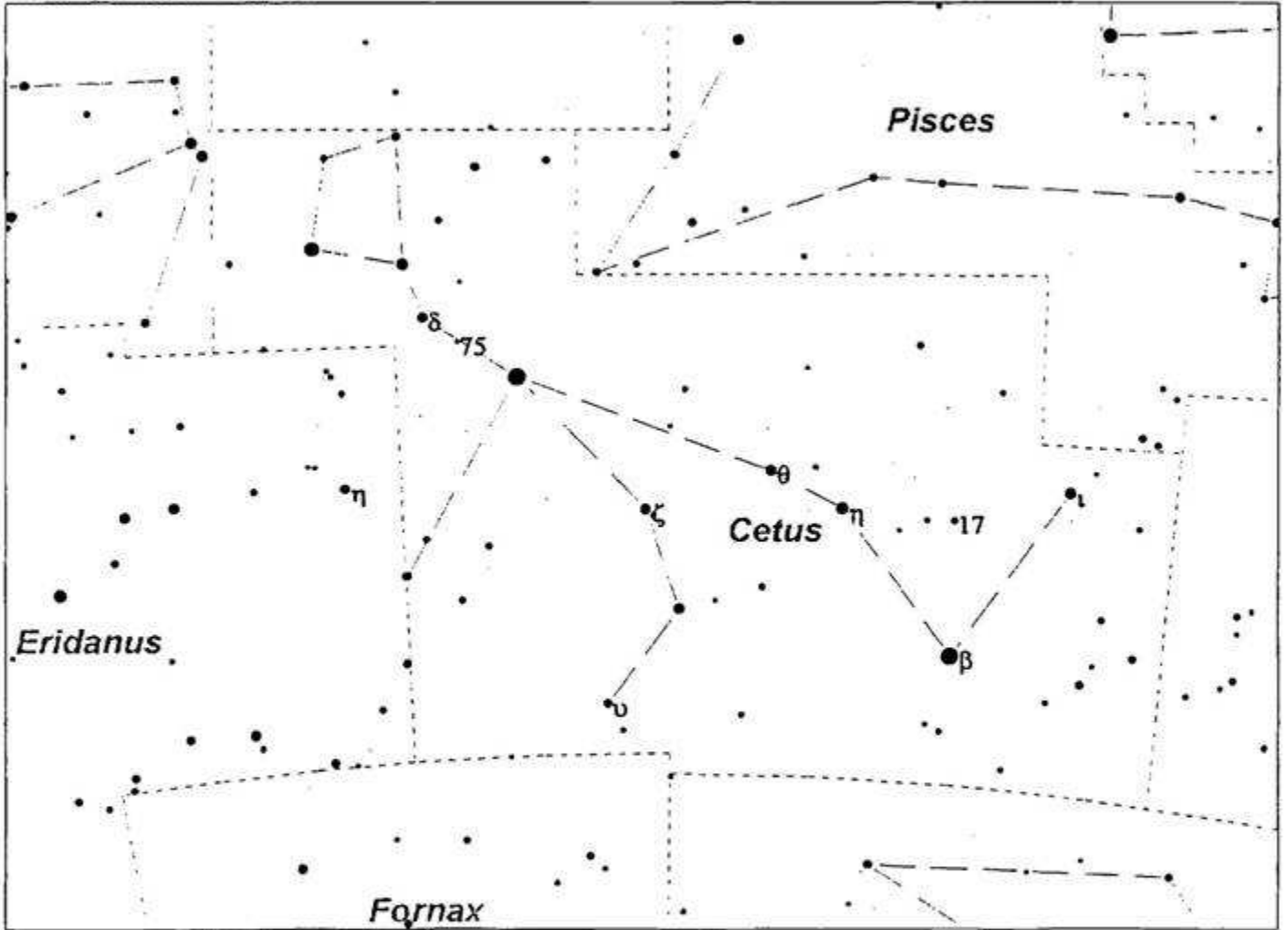
notes \_\_\_\_\_

ngc720  
GX MAG 10.5  
RA 1 53.0 DEC -13 44  
SA2000 10 URAN 264

from  $\zeta$  CET go  $.4^\circ$  E and  $3.4^\circ$  S to ngc720

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



## CETUS (continued)

ngc1052  
GX MAG 10.5  
RA 2 41.0 DEC -8 15  
SA2000 10 URAN 265

from  $\eta$  ERI go  $.6^\circ$  N and  $3.8^\circ$  W to ngc1052

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc1022  
GX MAG 11.5  
RA 2 38.5 DEC -6 40  
SA2000 10 URAN 265

from ngc1052 go  $.6^\circ$  W and  $1.6^\circ$  N to ngc1022  
\*sug target 1084 Eri\*

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc1055  
GX MAG 10.5  
RA 2 41.8 DEC 0 26  
SA2000 10 URAN 220

from  $\delta$  CET go  $.1^\circ$  N and  $.6^\circ$  E to ngc1055

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

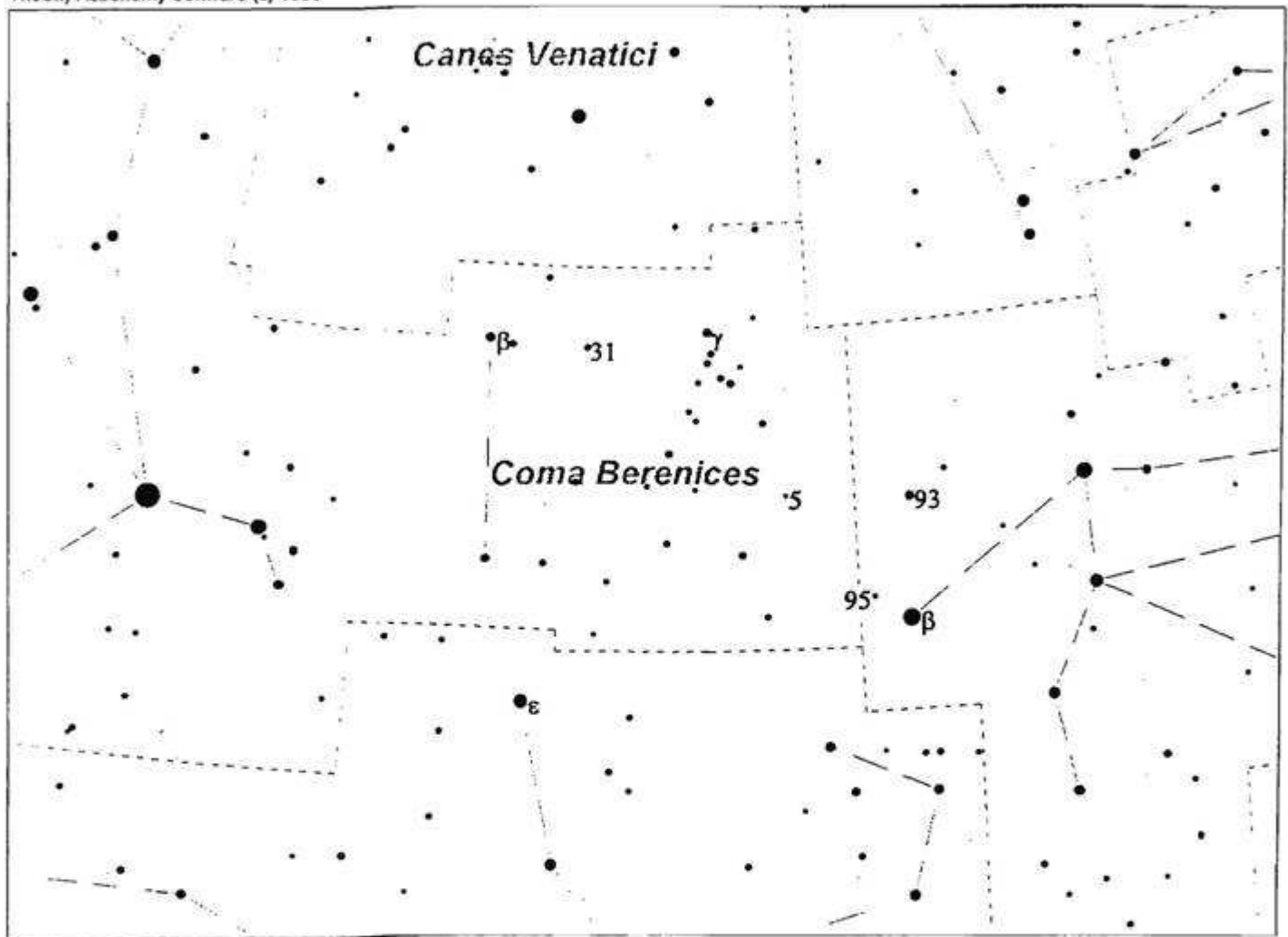
ngc936  
GX MAG 10.0  
RA 2 27.7 DEC -1 09  
SA2000 10 URAN 220

from  $\delta$  CET go  $1.4^\circ$  S and  $1.8^\circ$  W to star 75 CET  
then  
from star 75 CET go  $.1^\circ$  S and  $1.2^\circ$  W to ngc936

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*ERIDANIS SEARCH SEQUENCE BEGINS AT  $\eta$  ERI\*



# COMA BERENICES

## NORTHERN COMA BERENICES

ngc4448  
GX MAG 11.0  
RA 12 28.2 DEC 28 38  
SA2000 7 URAN 108

from  $\gamma$  COM go  $.3^\circ$  E and  $.3^\circ$  N to ngc4448

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4251  
GX MAG 12.0  
RA 12 18.2 DEC 28 11  
SA2000 7 URAN 108

from  $\gamma$  COM go  $.1^\circ$  S and  $1.9^\circ$  W to ngc4251

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4278  
GX MAG 10.5  
RA 12 20.2 DEC 29 18  
SA2000 7 URAN 108

from ngc4251 go  $.4^\circ$  E and  $1.1^\circ$  N to ngc4278

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4274  
GX MAG 10.5  
RA 12 19.9 DEC 29 37  
SA2000 7 URAN 108

from ngc4278 go  $.1^\circ$  W and  $.3^\circ$  N to ngc4274

date \_\_\_\_\_ site \_\_\_\_\_

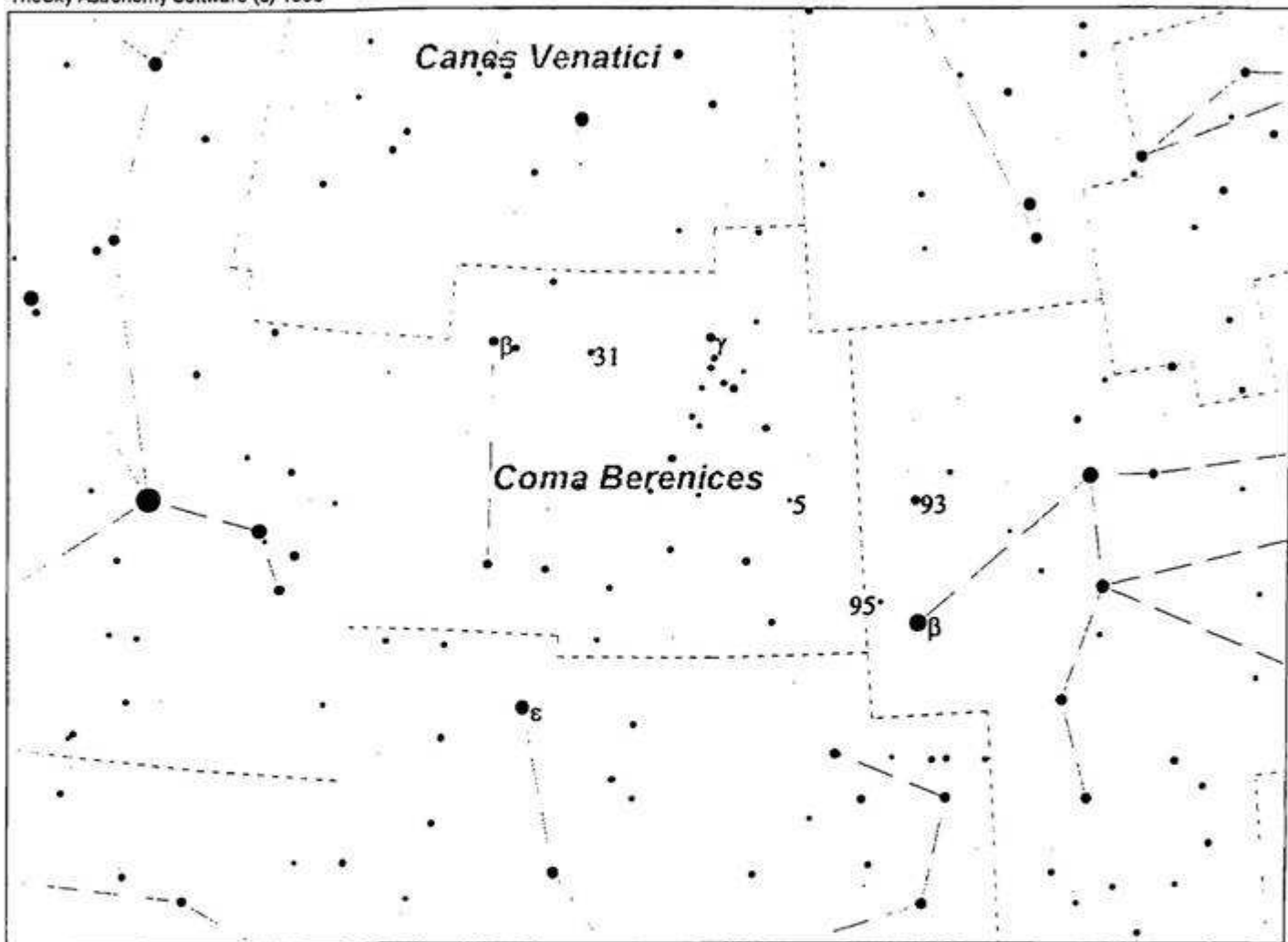
notes \_\_\_\_\_

ngc4245  
GX MAG 11.5  
RA 12 17.7 DEC 29 37  
SA2000 7 URAN 108

from ngc4274 go  $.5^\circ$  W to ngc4245

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_





# COMA BERENICES (continued)

ngc4314  
GX MAG 10.5  
RA 12 22.6 DEC 29 54  
SA2000 7 URAN 108

from ngc4245 return  $.5^{\circ}$  E to ngc4274  
then  
from ngc4274 go  $.2^{\circ}$  N and  $.6^{\circ}$  E to ngc4314

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4414  
GX MAG 11.5  
RA 12 26.4 DEC 31 14  
SA2000 7 URAN 108

from ngc4314 go  $.8^{\circ}$  E and  $1.3^{\circ}$  N to ngc4414

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4150  
GX MAG 12.0  
RA 12 10.6 DEC 30 25  
SA2000 7 URAN 108/107

from ngc4414 return  $1.3^{\circ}$  S and  $.8^{\circ}$  W to ngc4314  
then  
from ngc4314 go  $.5^{\circ}$  N and  $2.6^{\circ}$  W to ngc4150  
OR  
from  $\gamma$  COM go  $2.2^{\circ}$  N and  $3.5^{\circ}$  W to ngc4150

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4203  
GX MAG 11.0  
RA 12 15.2 DEC 33 13  
SA2000 7 URAN 108/107

from ngc4150 go  $1.0^{\circ}$  E and  $2.8^{\circ}$  N to ngc 4203  
\*sug targets 4214, 4631, and 4656 CnV\*

date \_\_\_\_\_ site \_\_\_\_\_

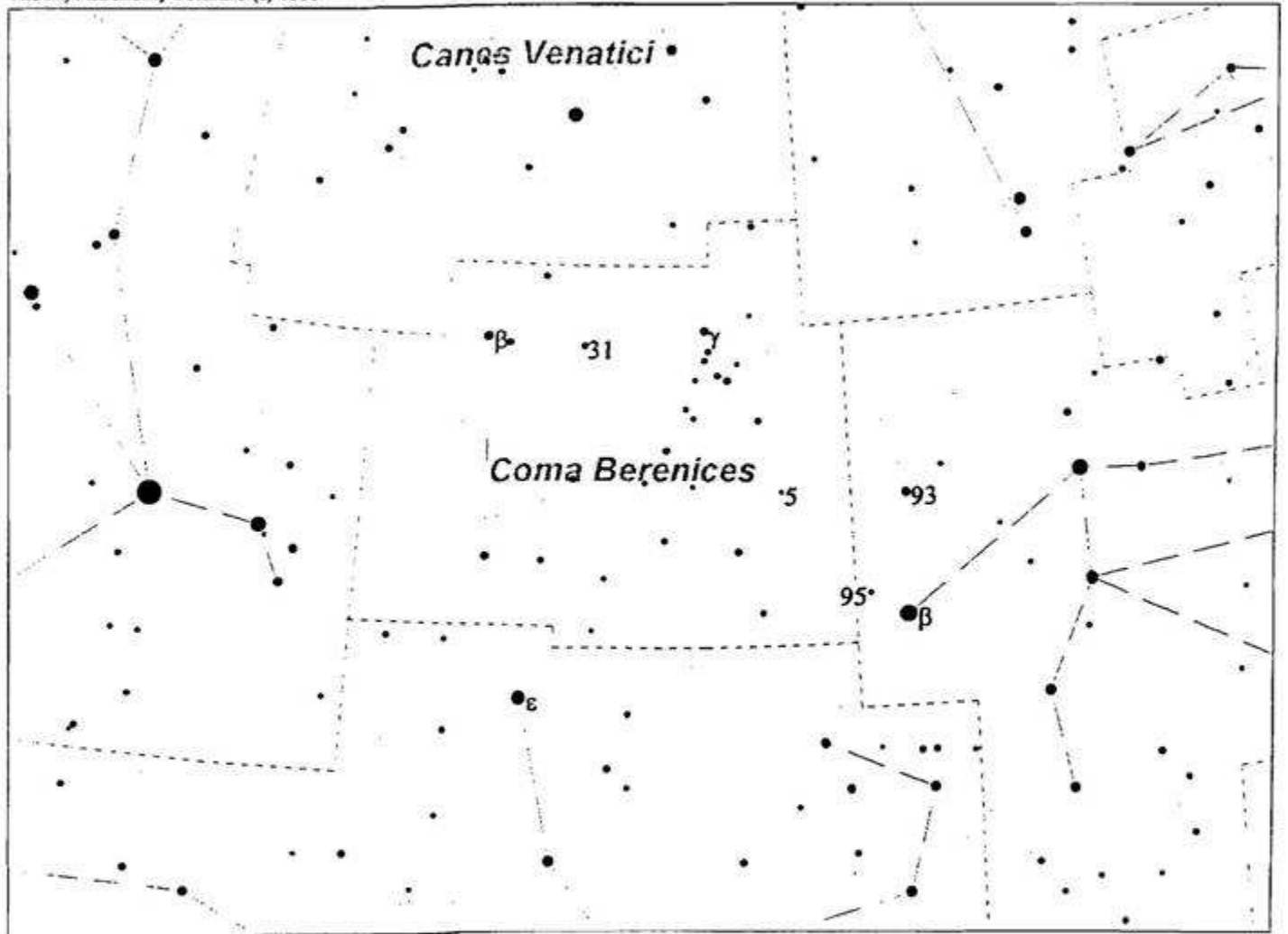
notes \_\_\_\_\_

ngc4559  
GX MAG 10.0  
RA 12 35.9 DEC 27 58  
SA2000 7 URAN 149

from  $\gamma$  COM go  $.3^{\circ}$  S and  $2.0^{\circ}$  E to ngc4559

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



# COMA BERENICES (continued)

ngc4565  
GX MAG 10.0  
RA 12 36.3 DEC 26 00  
SA2000 7 URAN 149

from ngc4559 go .1° E and 2.0° S to ngc4565

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4494  
GX MAG 10.0  
RA 12 31.3 DEC 25 47  
SA2000 7 URAN 149

from ngc4565 go .2° S and 1.1° W to ngc4494

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4725  
GX MAG 9.0  
RA 12 50.4 DEC 25 33  
SA2000 7 URAN 149

from ngc4494 go .3° S and 4.3° E to ngc4725

OR

from  $\beta$  COM go .3° S and 4.5° W to star 31 COM

then

from star 31 COM go .3° W and 2.0° S to ngc4725

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

## SOUTHERN COMA BERENICES

ngc4147  
GC MAG 10.5  
RA 12 10.1 DEC 18 33  
SA2000 13 URAN 148

from  $\beta$  LEO go 1.1° N and 1.6° E to star 95 LEO

then

from star 95 LEO go 3.5° E and 2.9° N to ngc4147

OR

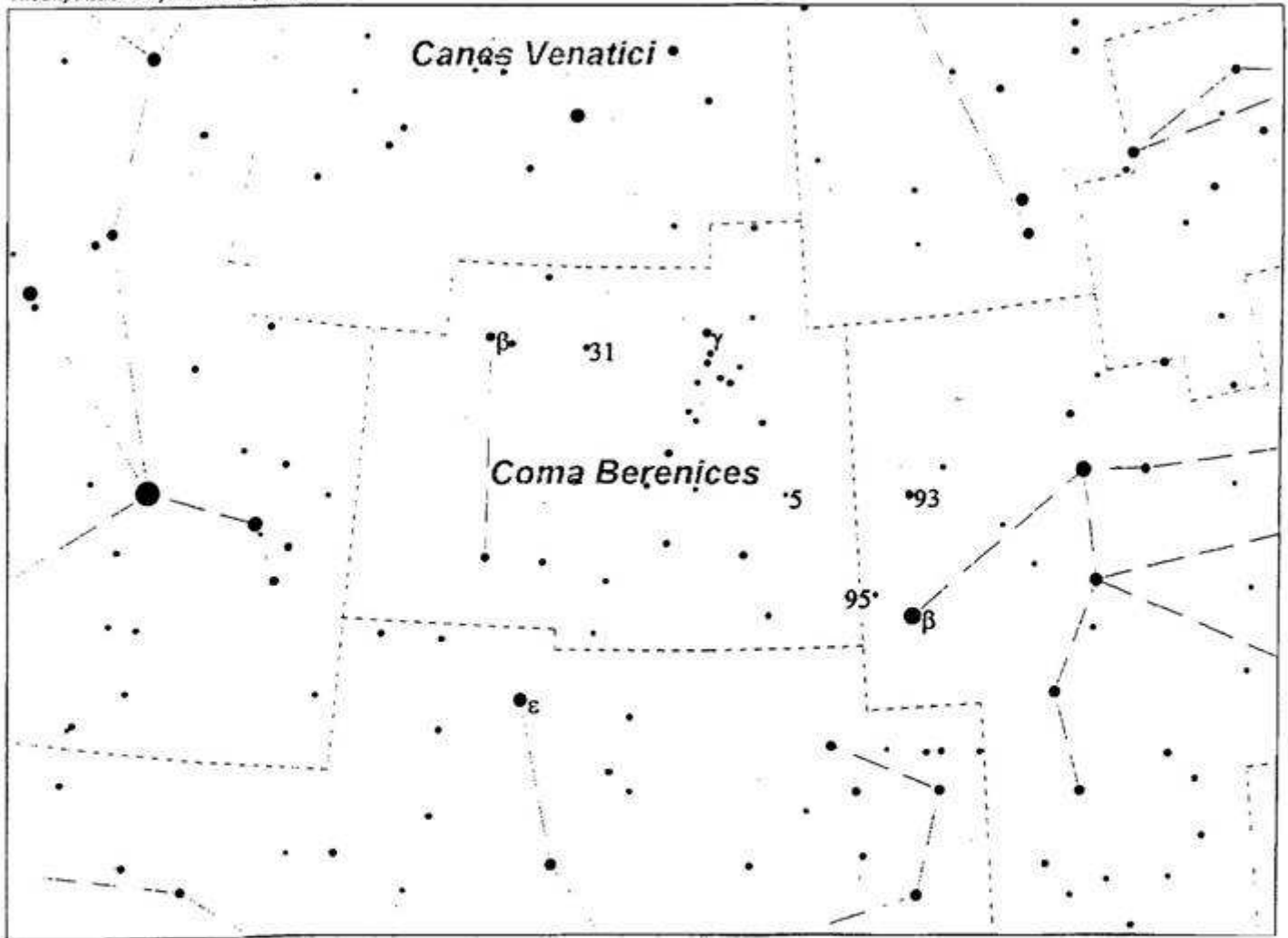
from star 93 LEO go .3° N and 5.6° E to star 5 COM

then

from star 5 COM go .5° W and 2.0° S to ngc4147

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



## COMA BERENICES (continued)

ngc4293  
GX MAG 11.0  
RA 12 21.3 DEC 18 24  
SA2000 13 URAN 148

from ngc4147 go .2° S and 2.6° E to ngc4293

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4394  
GX MAG 11.0  
RA 12 26.0 DEC 18 13  
SA2000 13 URAN 148

from ngc4293 go .2° S and 1.0° E to m85  
ngc4394 lies .1° E of m85

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4450  
GX MAG 10.0  
RA 12 28.6 DEC 17 06  
SA2000 13 URAN 148

from ngc4394 go .6° E and 1.1° S to ngc4450

date \_\_\_\_\_ site \_\_\_\_\_

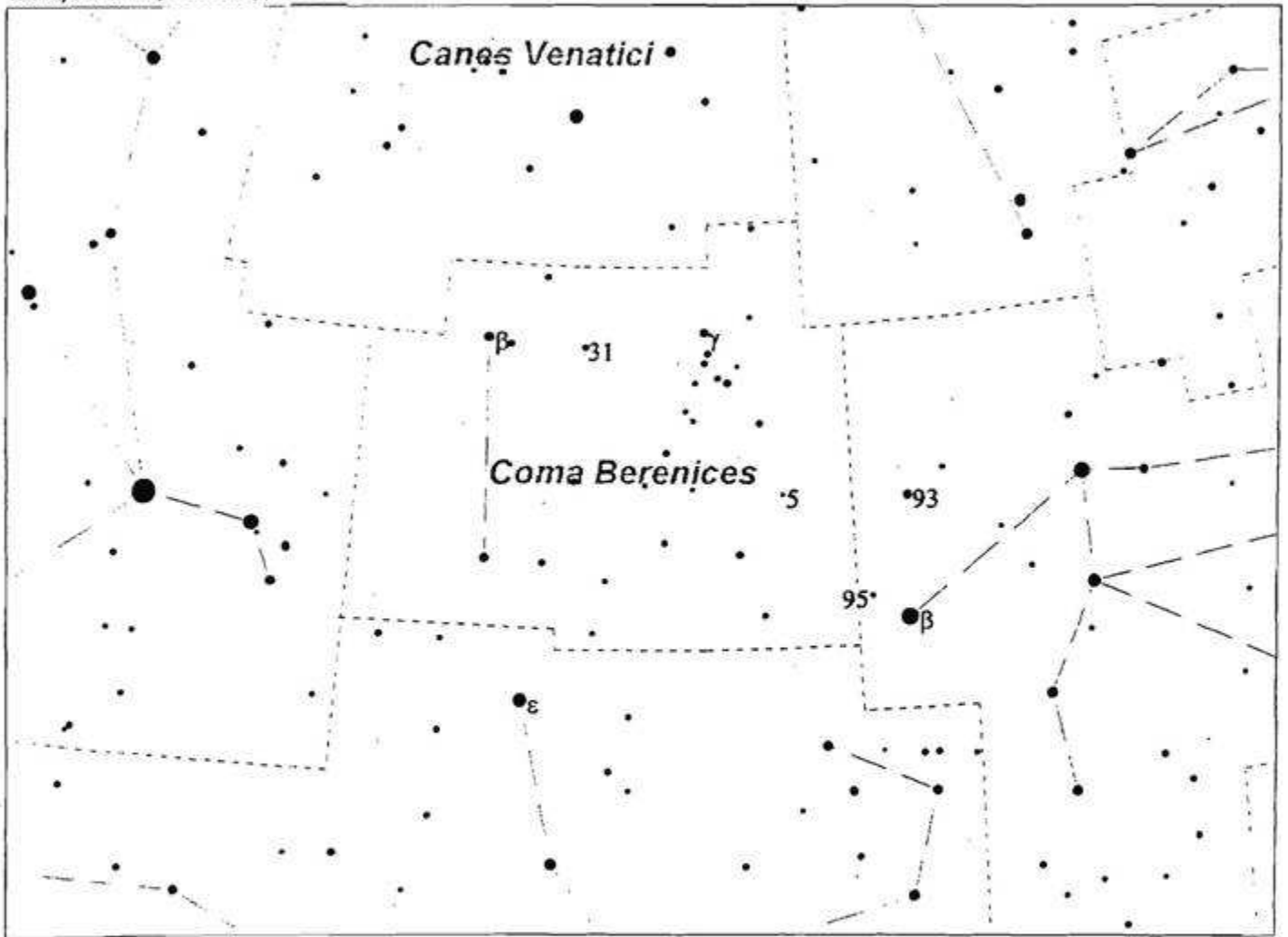
notes \_\_\_\_\_

ngc4350  
GX MAG 11.0  
RA 12 24.0 DEC 16 42  
SA2000 13 URAN 148

from ngc4450 go .4° S and 1.1° W to ngc4350

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



# COMA BERENICES (continued)

ngc4419  
GX MAG 11.0  
RA 12 27.0 DEC 15 03  
SA2000 13 URAN 193

from ngc4350 go .7° E and 1.6° S to ngc4419

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4459  
GX MAG 10.5  
RA 12 29.1 DEC 13 59  
SA2000 13 URAN 193

from ngc4419 go .5° E and 1.1° S to ngc4459

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4477  
GX MAG 10.5  
RA 12 30.1 DEC 13 39  
SA2000 13 URAN 193

from ngc4459 go .2° E and .3° S to ngc4477

date \_\_\_\_\_ site \_\_\_\_\_

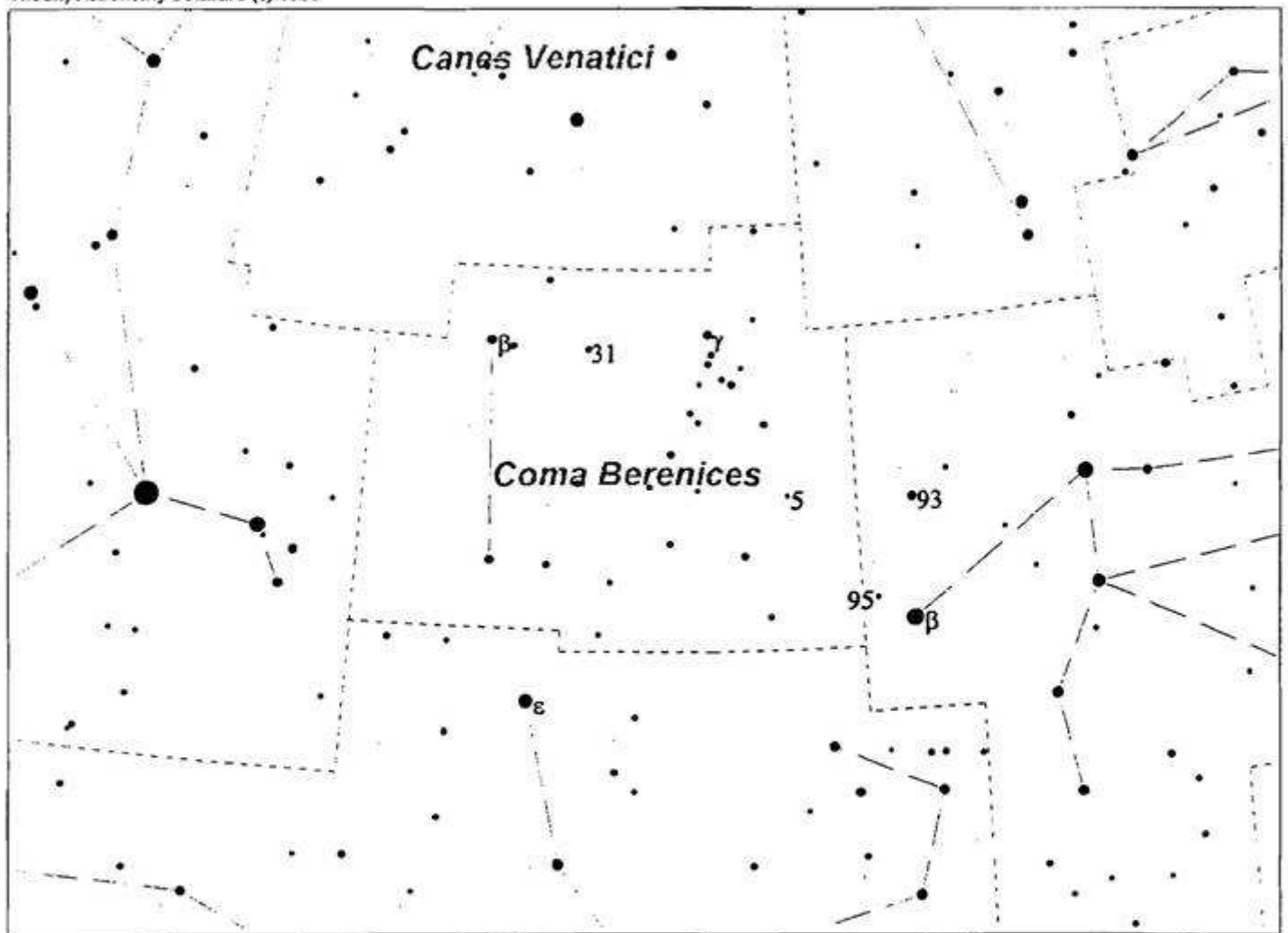
notes \_\_\_\_\_

ngc4473  
GX MAG 10.0  
RA 12 29.9 DEC 13 26  
SA2000 13 URAN 193

from ngc4477 go .05° W and .2° S to ngc4473

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_





## COMA BERENICES (continued)

ngc4548 (m91)  
GX MAG 10.0  
RA 12 35.5 DEC 14 30  
SA2000 13 URAN 194

from ngc4473 go  $.3^\circ$  S and  $1.7^\circ$  E to m90  
then  
from m90 go  $.3^\circ$  W and  $1.3^\circ$  N to ngc4548

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

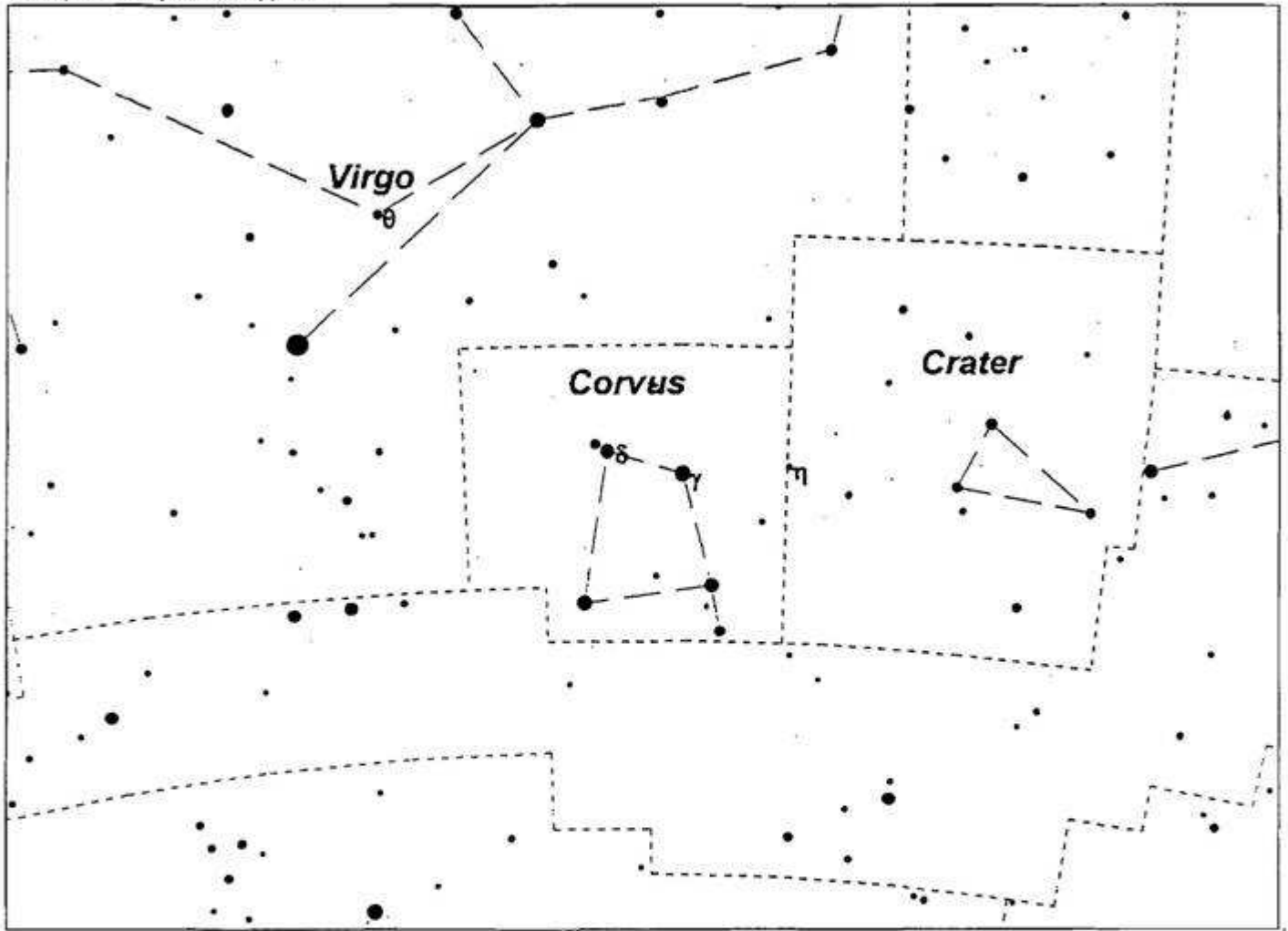
ngc4689  
GX MAG 11.0  
RA 12 47.9 DEC 13 46  
SA2000 13 URAN 194

from ngc4548 go  $.7^\circ$  S and  $3.0^\circ$  E to ngc4689  
OR  
from  $\epsilon$  VIR go  $1.4^\circ$  N and  $2.1^\circ$  W to star 41 VIR  
then  
from star 41 VIR go  $1.1^\circ$  N and  $1.3^\circ$  W to star 28 VIR  
ngc4689 lies  $.1^\circ$  W and  $.2^\circ$  N of star 28 VIR  
\*sug target 4866 Vir lies  $.4^\circ$  N and  $2.8^\circ$  E of ngc4689\*

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*NORTHERN VIRGO SEARCH SEQUENCE BEGINS AT  $\epsilon$  VIR\*



## CORVUS

\*SOUTHERN DECLINATION ADVISORY\*

ngc4027  
GX MAG 11.0  
RA 11 59.6 DEC -19 15  
SA2000 21 URAN 328

from  $\eta$  CRT go  $.8^\circ$  E and  $2.1^\circ$  S to ngc4027  
OR  
from  $\gamma$  CRV go  $1.7^\circ$  S and  $3.8^\circ$  W to ngc4027

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4038  
GX MAG 10.5  
RA 12 01.9 DEC -18 51  
SA2000 21 URAN 328

from ngc4027 go  $.6^\circ$  E and  $.4^\circ$  N to ngc4038

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

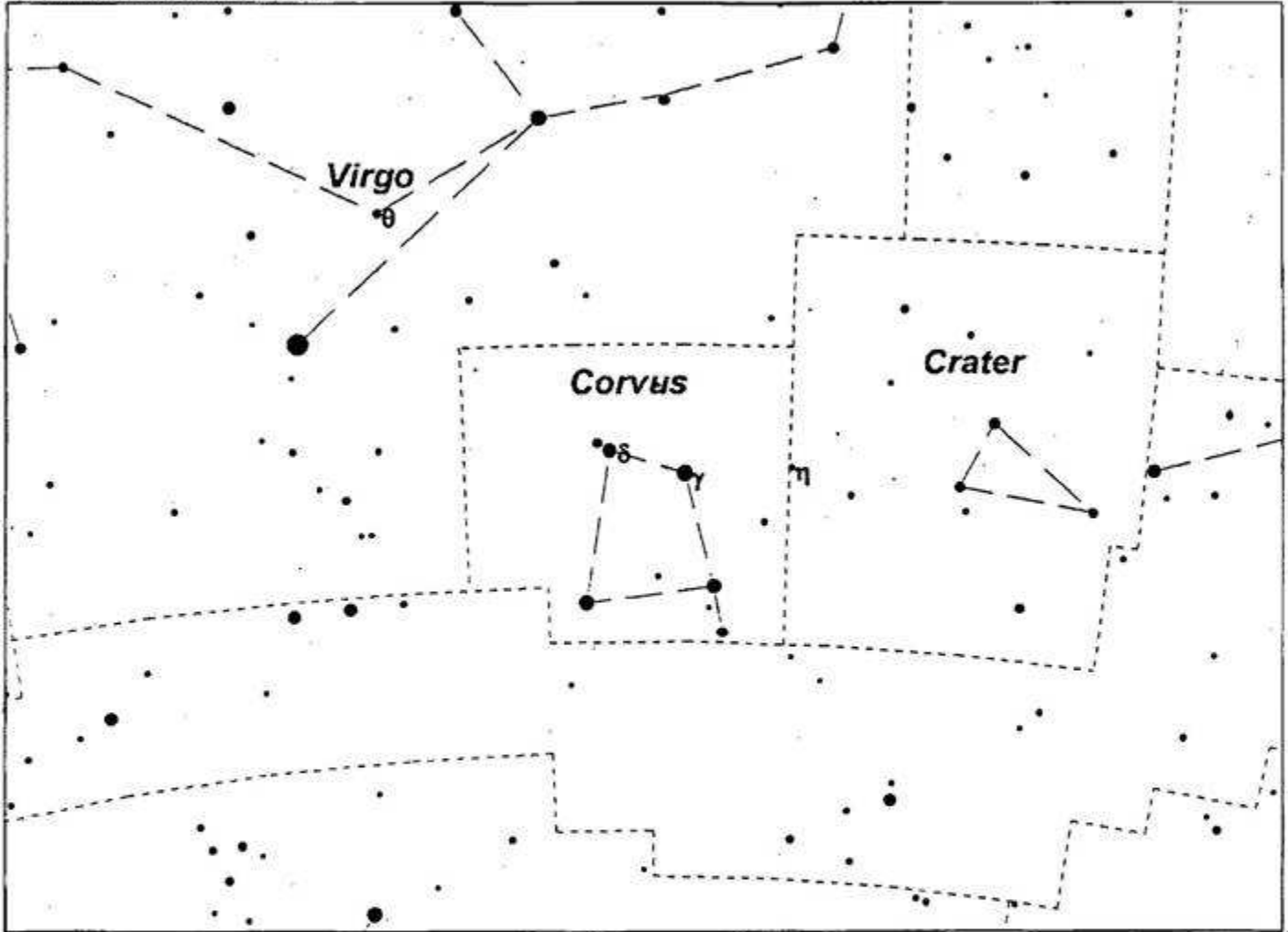
ngc4361  
PN MAG 10.0  
RA 12 24.5 DEC -18 48  
SA2000 21 URAN 328

from ngc4038 go  $.1^\circ$  N and  $5.3^\circ$  E to ngc4361  
OR  
from  $\delta$  CRV go  $1.3^\circ$  W and  $2.2^\circ$  S to ngc4361  
\*sug targets 3962 Crt and 3621 Hya\*

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*SOUTHERN VIRGO SEARCH SEQUENCE BEGINS AT  $\theta$  VIR\*



# CRATER

\*SOUTHERN DECLINATION ADVISORY\*

ngc3962

GX MAG 11.0

RA 11 54.8 DEC -13 58

SA2000 13 URAN 283/282

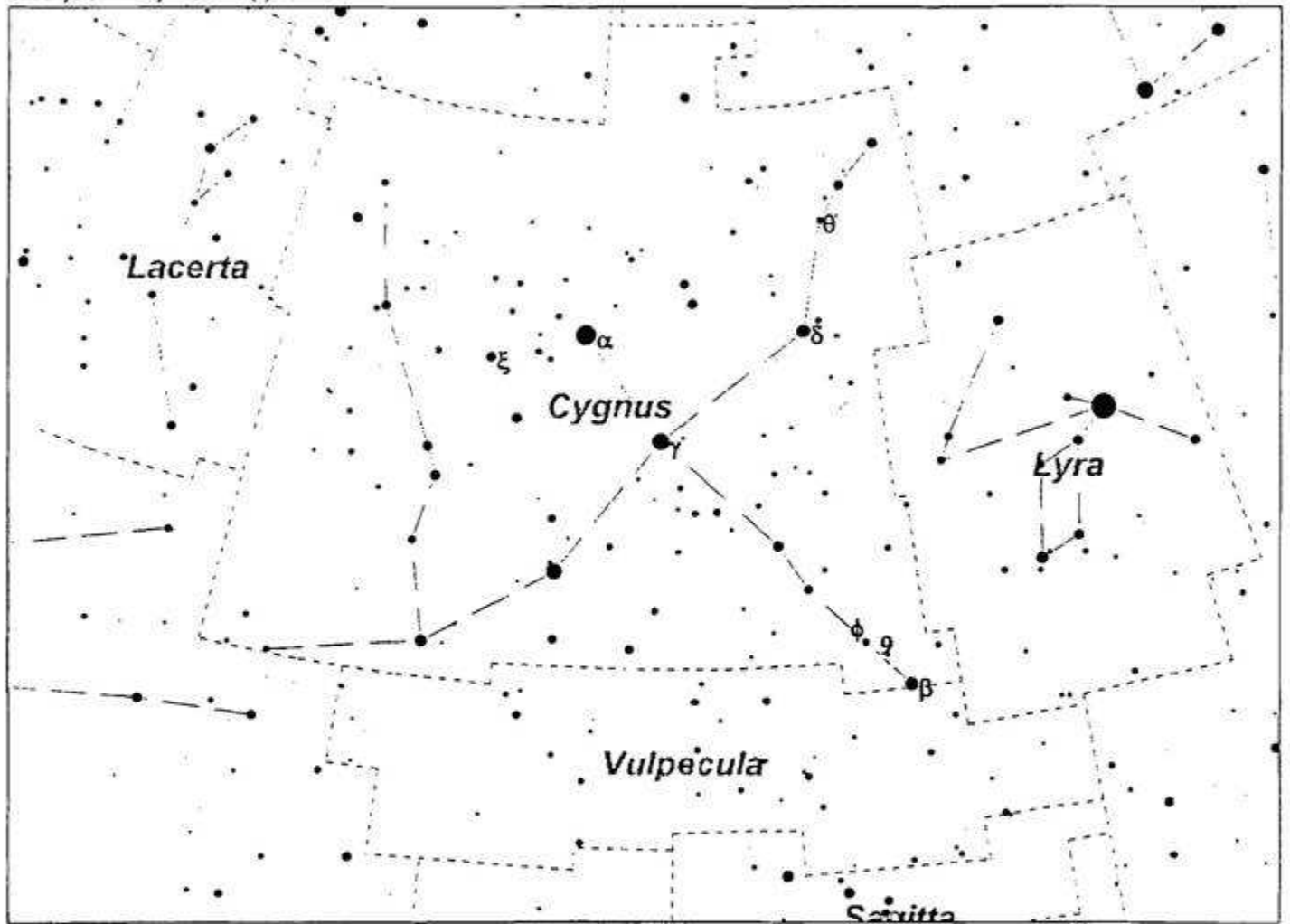
from  $\gamma$  CRV go  $.4^\circ$  N and  $4.7^\circ$  W to  $\eta$  CRT  
then

from  $\eta$  CRT go  $.3^\circ$  W and  $3.2^\circ$  N to ngc3962

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*CORVUS SEARCH SEQUENCE BEGINS AT  $\eta$  CRV\*



# CYGNUS

ngc6834  
OC MAG 8.0  
RA 19 52.2 DEC 29 25  
SA2000 8 URAN 118/119

from  $\phi$  CYG go  $.7^\circ$  S and  $2.8^\circ$  E to ngc6834  
OR  
from  $\beta$  CYG go  $.9^\circ$  E and  $1.5^\circ$  N to star 9 CYG  
then  
from star 9 CYG go  $3.8^\circ$  E to ngc6834

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*VULPECULA SEARCH SEQUENCE BEGINS AT  $\alpha$  SGE OR GO ON TO NGC6826\*

ngc6826  
PN MAG 9.0  
RA 19 44.8 DEC 50 31  
SA2000 9 URAN 55

from  $\theta$  CYG go  $.3^\circ$  N and  $1.3^\circ$  E to ngc6826

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc6866  
OC MAG 7.5  
RA 20 03.7 DEC 44 00  
SA2000 9 URAN 84

from  $\delta$  CYG go  $1.1^\circ$  S and  $3.4^\circ$  E to ngc6866

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc6910  
OC MAG 7.5  
RA 20 23.1 DEC 40 47  
SA2000 9 URAN 84

from  $\gamma$  CYG go  $.2^\circ$  E and  $.5^\circ$  N to ngc6910

date \_\_\_\_\_ site \_\_\_\_\_

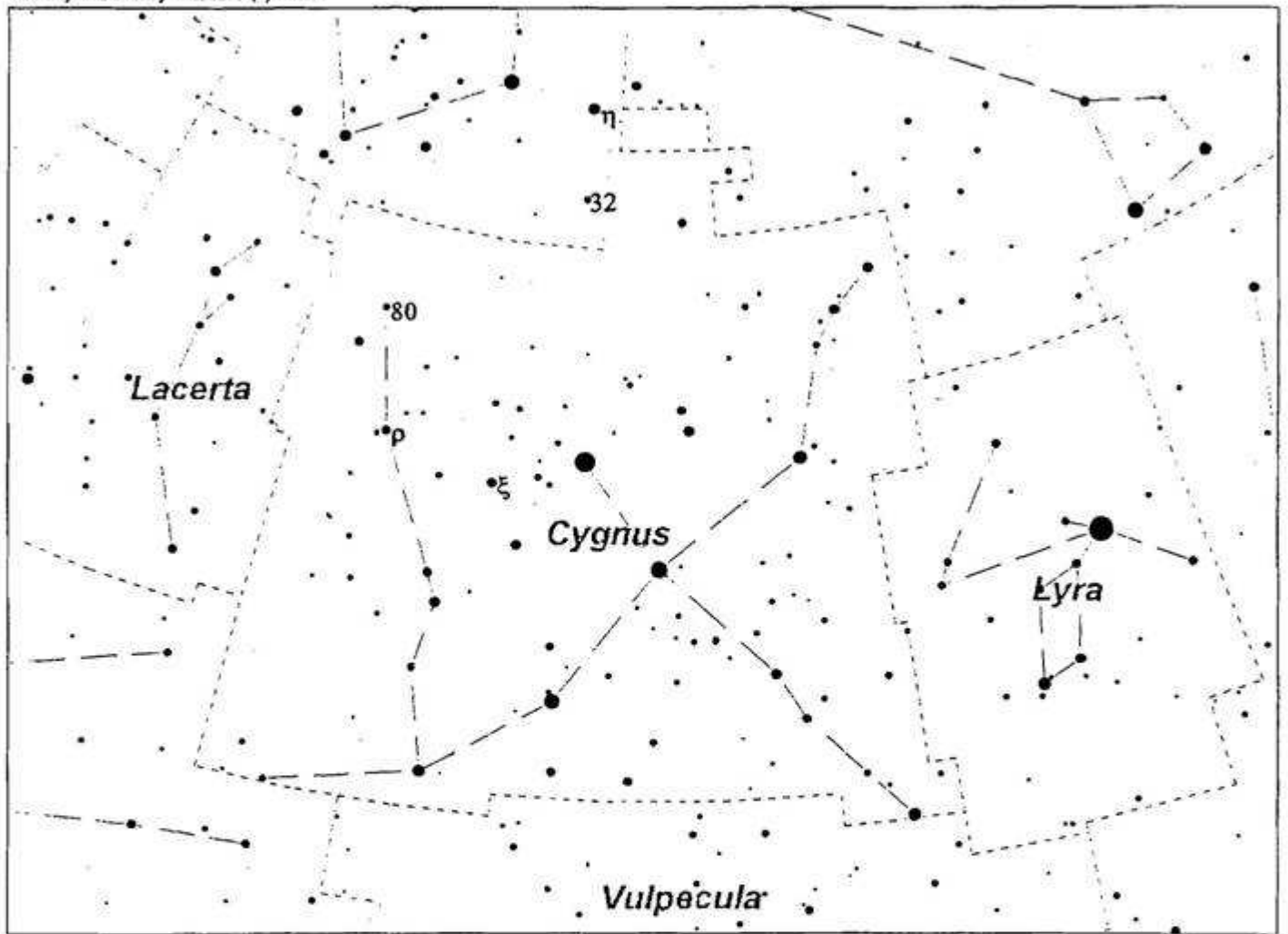
notes \_\_\_\_\_

ngc7000  
DN MAG N/A  
RA 21 01.8 DEC 44 12  
SA2000 9 URAN 85

from  $\xi$  CYG go  $.5^\circ$  N and  $1.0^\circ$  W to ngc7000  
OR  
from  $\alpha$  CYG go  $.9^\circ$  S and  $3.2^\circ$  E to ngc7000

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_





# CYGNUS (continued)

ngc7044  
OC MAG 11.0  
RA 21 12.9 DEC 42 29  
SA2000 9 URAN 85

from  $\xi$  CYG go 1.4° E and 1.4° S to ngc7044

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc7062  
OC MAG 8.5  
RA 21 23.2 DEC 46 23  
SA2000 9 URAN 86

from ngc7044 go 1.9° E and 3.9° N to ngc7062

OR

from  $\rho$  CYG go .8° N and 1.8° W to ngc7062

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*LACERTA SEARCH SEQUENCE BEGINS AT  $\rho$  CYG OR GO ON TO NGC7086\*

ngc7086  
OC MAG 8.5  
RA 21 30.5 DEC 51 35  
SA2000 9 URAN 86

from 7062 go 1.5° E and 2.0° N to m39

then

from m39 go .3° W and 3.1° N to ngc7086

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc7128  
OC MAG 10.0  
RA 21 44.0 DEC 53 43  
SA2000 9 URAN 57

from 7086 go .4° S and 1.8° E to star 80 CYG

then

from star 80 CYG go .3° E and 2.5° N to ngc7128

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc7008  
PN MAG 13.0  
RA 21 00.6 DEC 54 33  
SA2000 9 URAN 57/56

from ngc7128 go .8° N and 6.3° W to ngc7008

OR

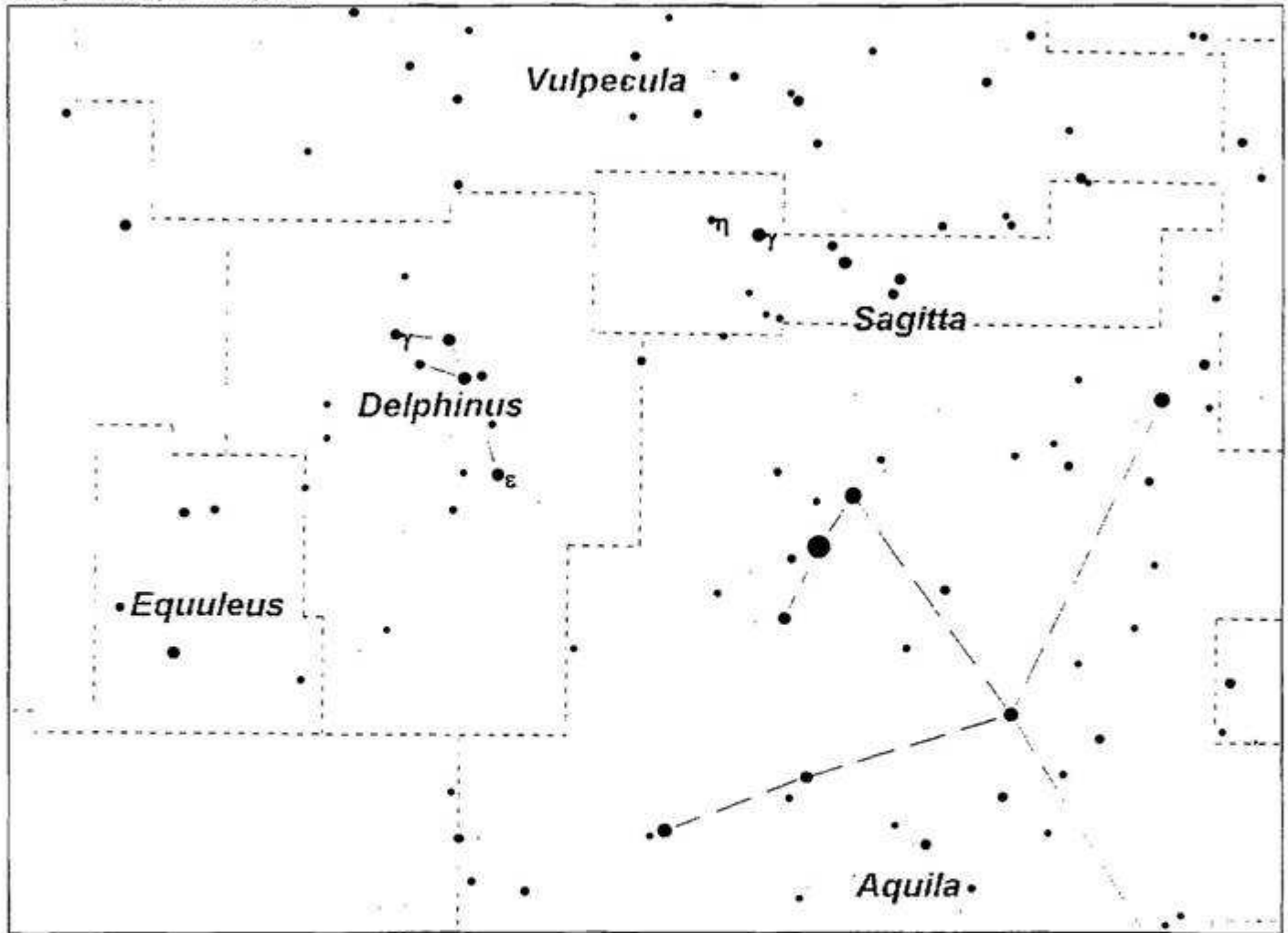
from  $\eta$  CEP go 4.2° S to star marked '32'

then

from star marked '32' go 2.1° E and 3.1° S to ngc7008

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



# DELPHINUS

ngc6905  
PN MAG 12.0  
RA 20 22.4 DEC 20 06  
SA2000 16 URAN 163

from  $\gamma$  SGE go  $.5^\circ$  N and  $1.5^\circ$  E to  $\eta$  SGE  
then  
from  $\eta$  SGE go  $.1^\circ$  N and  $4.1^\circ$  E to ngc6905

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc6934  
GC MAG 9.0  
RA 20 34.2 DEC 7 24  
SA2000 16 URAN 209

from  $\epsilon$  DEL go  $.2^\circ$  E and  $3.9^\circ$  S to ngc6934

date \_\_\_\_\_ site \_\_\_\_\_

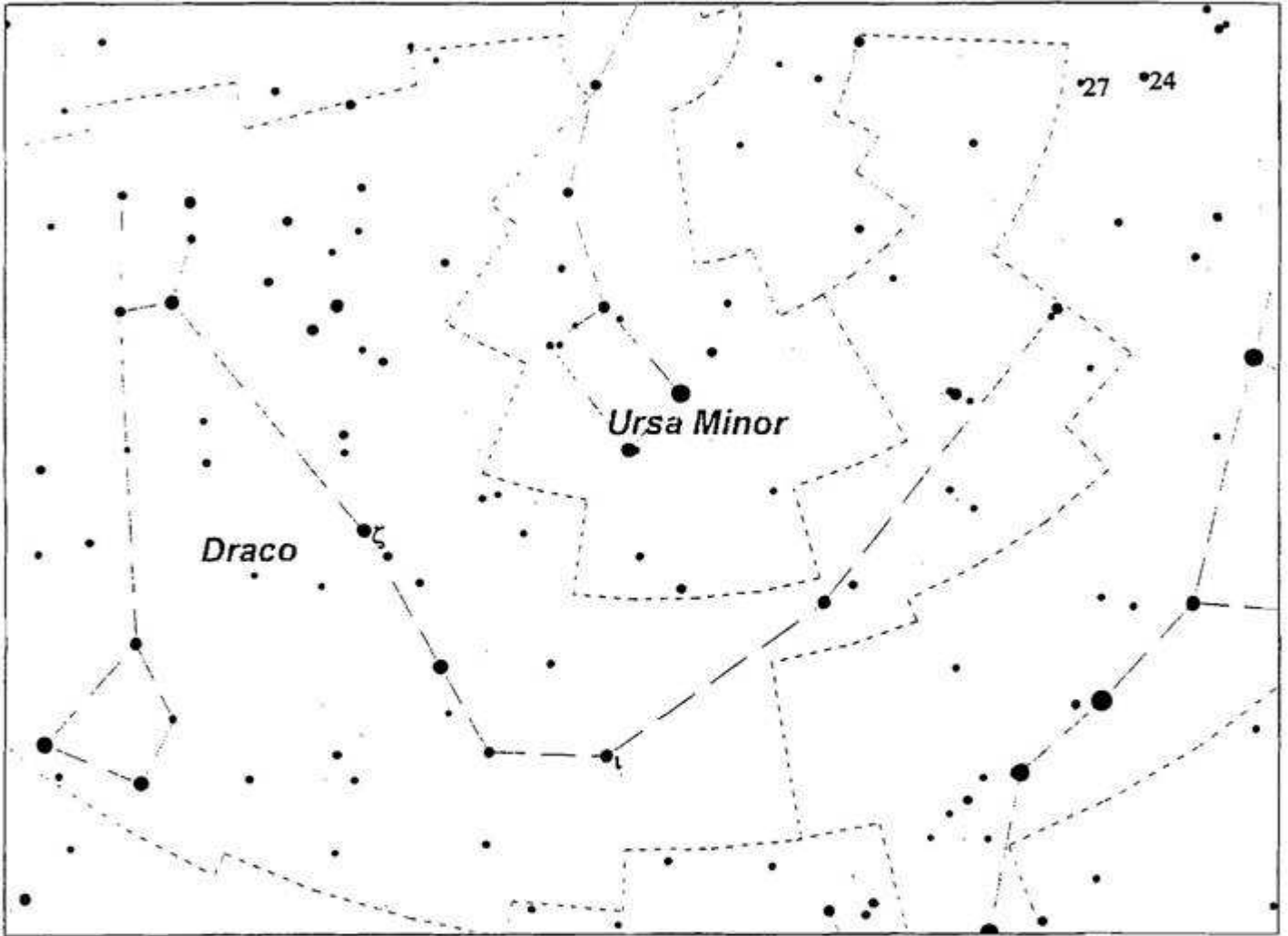
notes \_\_\_\_\_

ngc7006  
GC MAG 11.0  
RA 21 01.5 DEC 16 11  
SA2000 16 URAN 209

from  $\gamma$  DEL go  $3.6^\circ$  E to ngc7006

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



# DRACO

ngc3147  
GX MAG 11.0  
RA 10 16.9 DEC 73 25  
SA2000 2 URAN 23/8

from star 24 UMA go .7° E and 2.4° N to star 27 UMA  
\*target 2985 UMa lies .6° E of star 27 UMa\*  
then  
from star 27 UMA go 2.6° E and 1.1° N to ngc3147

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc5907  
GX MAG 10.5  
RA 15 15.9 DEC 56 19  
SA2000 2 URAN 50

from t DRA go 1.2° W and 2.6° S to ngc5907

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc5866 (m102)  
GX MAG 10.0  
RA 15 06.5 DEC 55 45  
SA2000 2 URAN 50

from ngc5907 go .5° S and 1.3° W to ngc5866

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc5982  
GX MAG 11.0  
RA 15 38.6 DEC 59 21  
SA2000 2 URAN 51

from t DRA go .4° N and 1.7° E to ngc5982

date \_\_\_\_\_ site \_\_\_\_\_

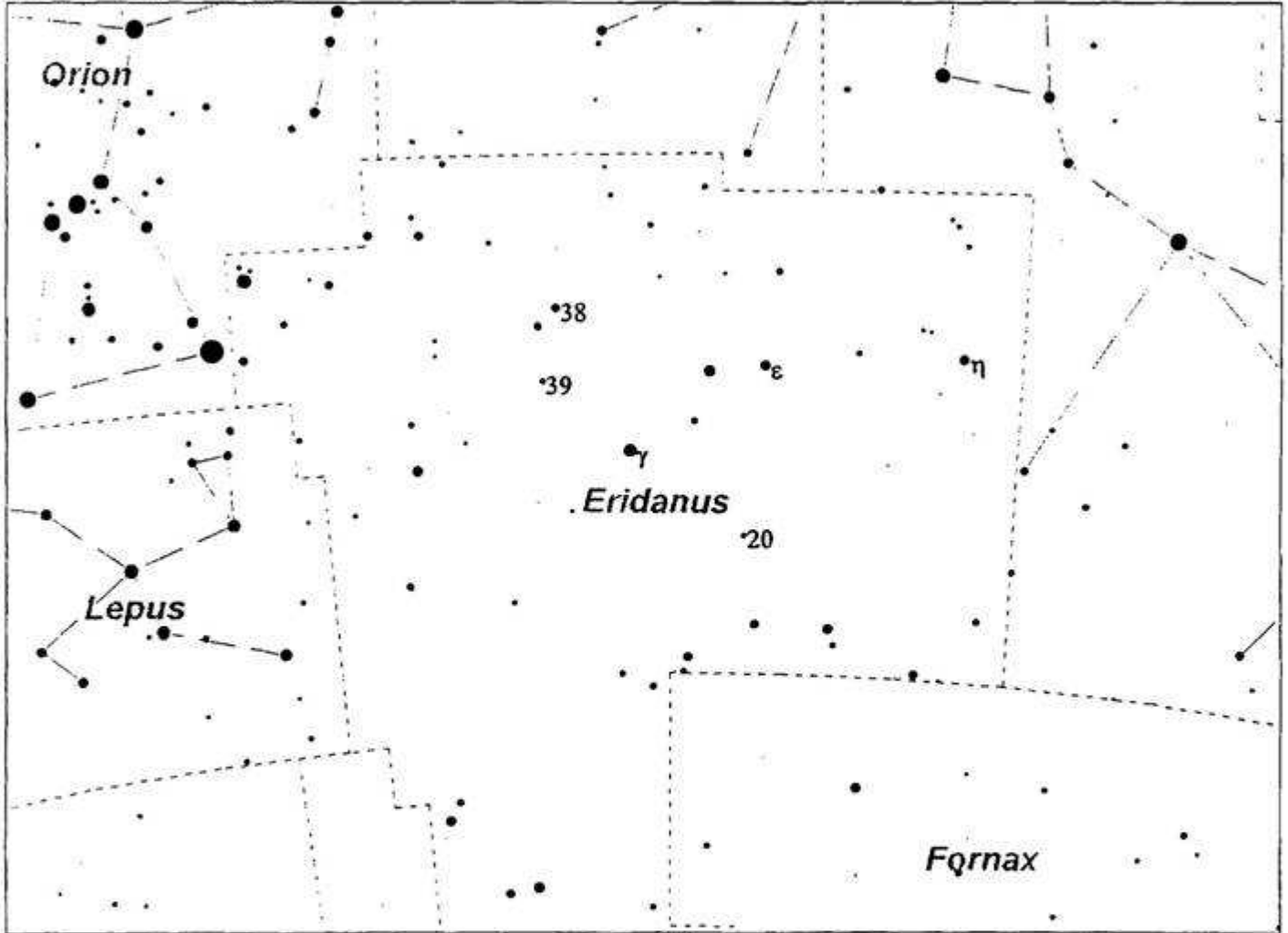
notes \_\_\_\_\_

ngc6543  
PN MAG 9.0  
RA 17 58.6 DEC 66 38  
SA2000 3 URAN 29/30

from ζ DRA go .9° N and 4.9° E to ngc6543

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



# ERIDANIS

\*SOUTHERN DECLINATION ADVISORY\*

ngc1084  
GX MAG 11.0  
RA 2 45.9 DEC -7 35  
SA2000 10 URAN 265

from  $\eta$  ERI go 1.3° N and 2.6° W to ngc1084  
\*sug targets 1052 and 1022 Cet\*

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc1407  
GX MAG 10.0  
RA 3 40.1 DEC -18 34  
SA2000 10 URAN 312

from  $\epsilon$  ERI go .8° E and 8.0° S to star 20 ERI  
then  
from star 20 ERI go .9° E and 1.1° S to ngc1407

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

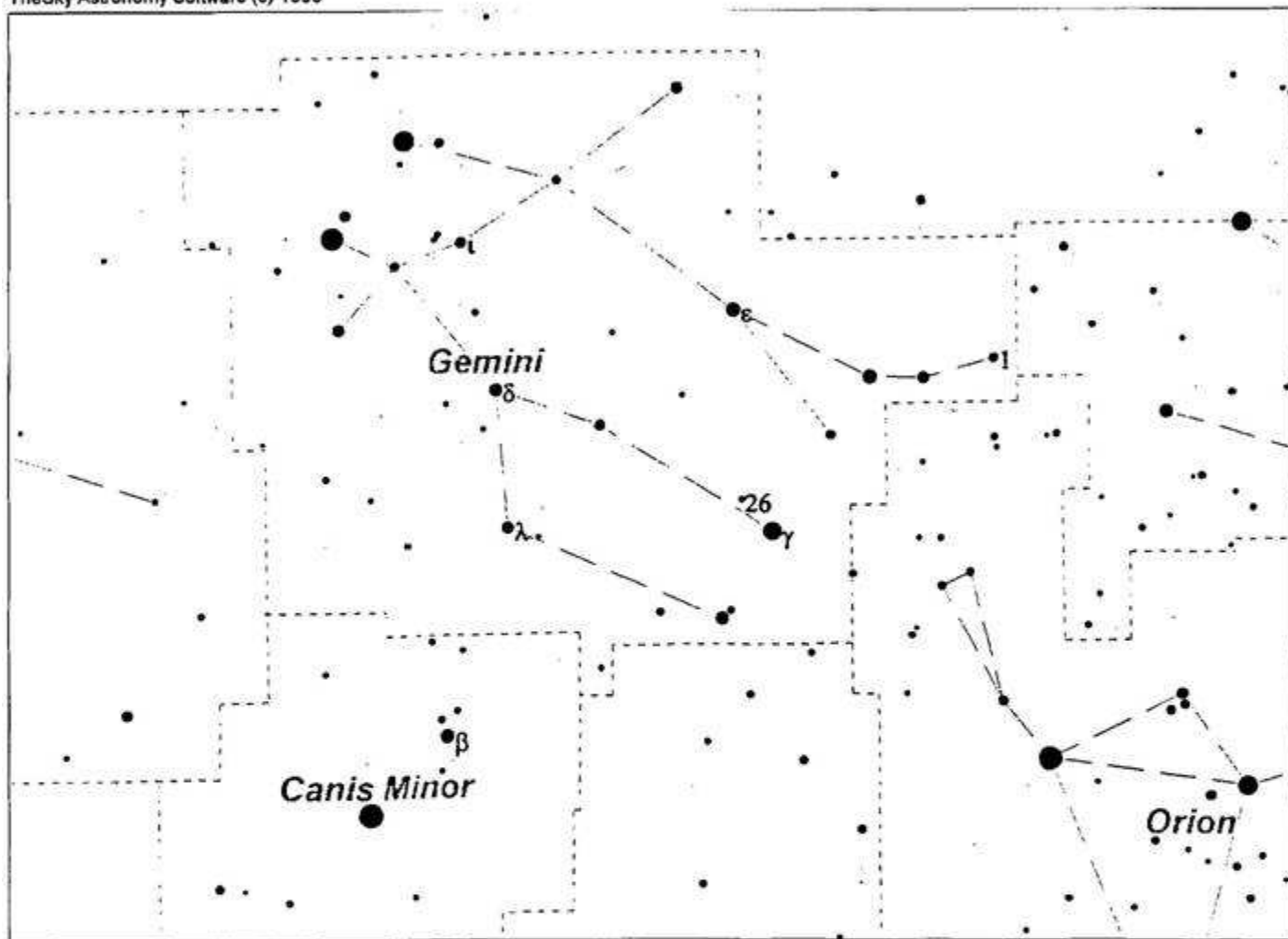
ngc1535  
PN MAG 10.0  
RA 4 14.2 DEC -12 44  
SA2000 11 URAN 268

from  $\gamma$  ERI go .8° N and 3.9° E to ngc1535  
OR  
from star 38 ERI go .6° E and 3.4° S to star 39 ERI  
then  
from star 39 ERI go 2.5° S to ngc1535

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*LEPUS SEARCH SEQUENCE BEGINS AT  $\beta$  LEP\*





# GEMINI

ngc2129  
OC MAG 7.0  
RA 6 01.0 DEC 23 18  
SA2000 5 URAN 136

from star 1 GEM go .7° W to ngc2129

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc2158  
OC MAG 9.0  
RA 6 07.5 DEC 24 06  
SA2000 5 URAN 136

from ngc2129 go 1.0° N and 1.8° E to m35  
ngc2158 lies .4° SW of m35

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc2266  
OC MAG 9.5  
RA 6 43.2 DEC 26 58  
SA2000 5 URAN 138

from ε GEM go .2° W and 1.8° N to ngc2266

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc2304  
OC MAG 10.0  
RA 6 55.0 DEC 18 01  
SA2000 5 URAN 138

from γ GEM go 1.2° N and 1.1° E to star 26 GEM  
then  
from star 26 GEM go .4° N and 3.0° E to ngc2304

date \_\_\_\_\_ site \_\_\_\_\_

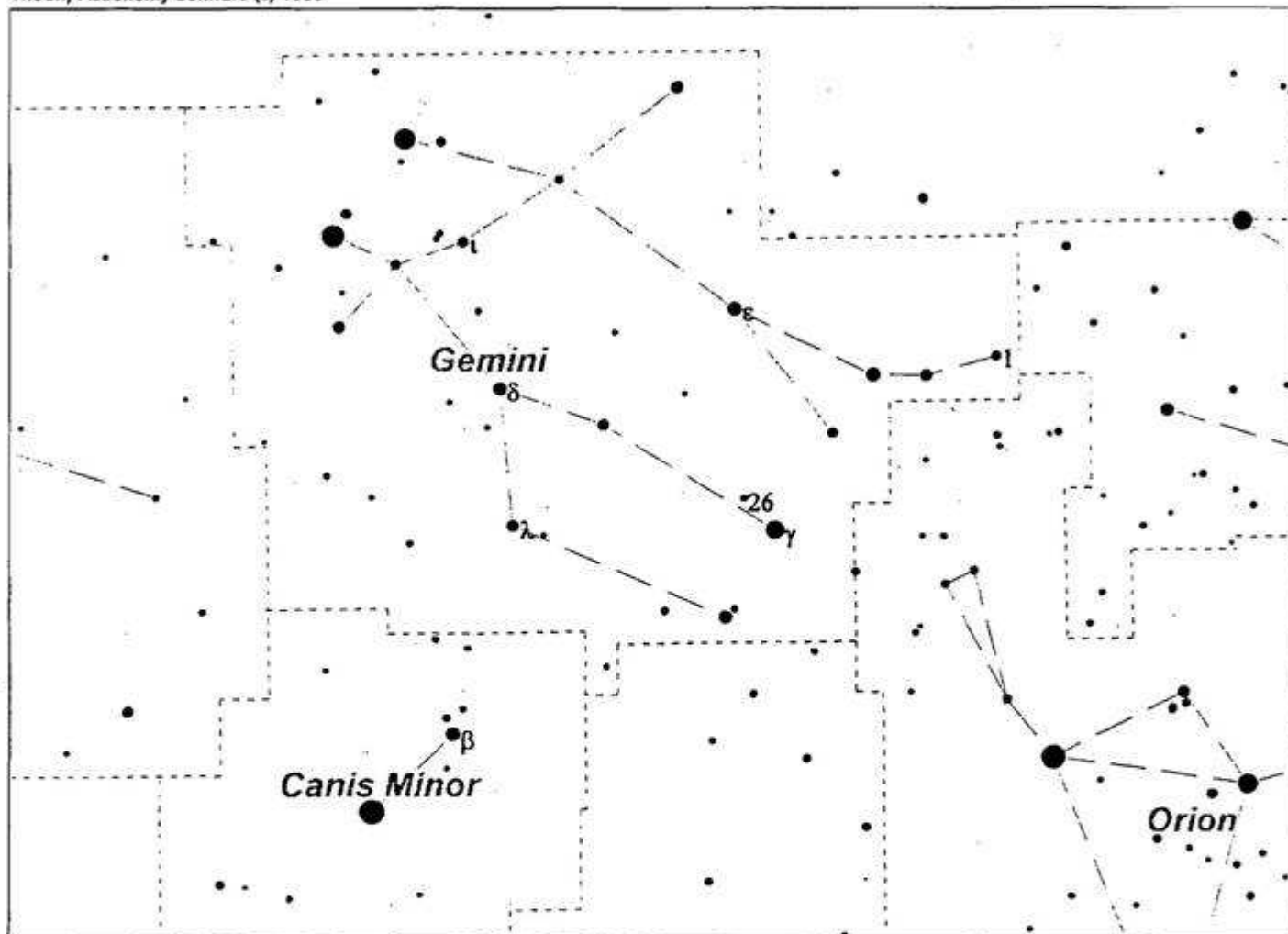
notes \_\_\_\_\_

ngc2392  
PN MAG 9.5  
RA 7 29.2 DEC 20 55  
SA2000 5 URAN 139

from δ GEM go 1.1° S and 2.1° E to ngc2392

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



# GEMINI (continued)

ngc2420  
OC MAG 8.5  
RA 7 38.5 DEC 21 34  
SA2000 5 URAN 139

from ngc2392 go .6° N and 2.2° E to ngc2420

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc2371  
PN MAG 13.0  
RA 7 25.6 DEC 29 29  
SA2000 5 URAN 100

from  $\iota$  GEM go 1.7° N to ngc2371  
( southwest section of target is ngc2371. see ngc2372 )  
\*sug target 2419 Lyn\*

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc2372  
PN MAG 13.0  
RA 7 25.6 DEC 29 29  
SA2000 5 URAN 100

from  $\iota$  GEM go 1.7° N to ngc2372  
( northeast section of target is ngc2372. see ngc2371 )  
\*sug target 2419 Lyn\*

ngc2355  
OC MAG 9.5  
RA 7 16.9 DEC 13 47  
SA2000 12 URAN 184

from  $\lambda$  GEM go .3° W and 2.7° S to ngc2355

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc2395  
OC MAG 8.5  
RA 7 27.1 DEC 13 35  
SA2000 12 URAN 184

from ngc2355 go .2° S and 2.5° E to ngc2395  
OR  
from  $\beta$  CMI go 5.3° N to ngc2395

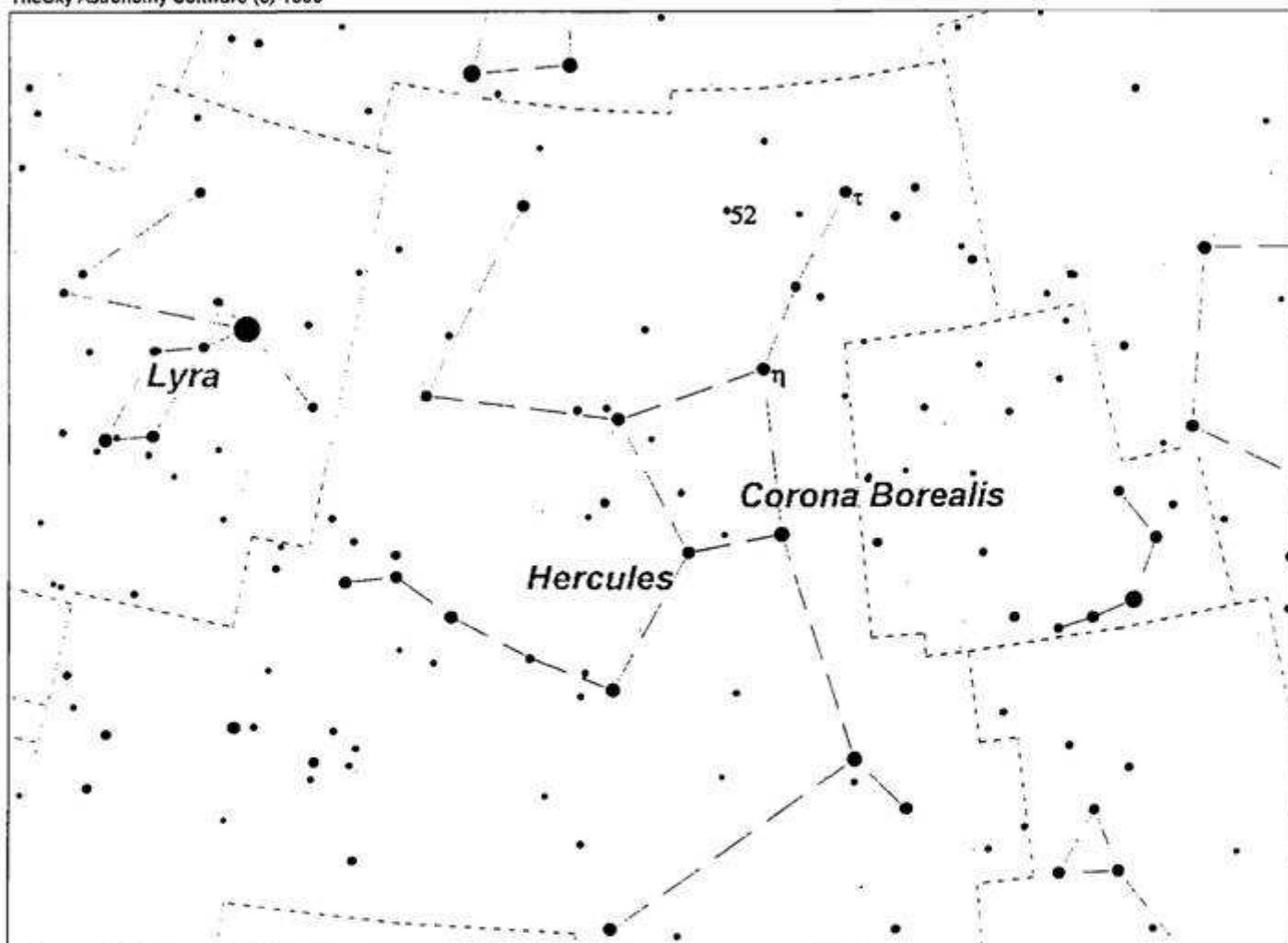
date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*MONOCEROS SEARCH SEQUENCE BEGINS AT  $\xi$  GEM\*

\*CANCER SEARCH SEQUENCE BEGINS AT  $\zeta$  HYA\*

\*HYDRA SEARCH SEQUENCE BEGINS AT  $\zeta$  MON\*



# HERCULES

ngc6207  
GX MAG 11.5  
RA 16 43.1 DEC 36 50  
SA2000 8 URAN 114

from  $\eta$  HER go  $.2^\circ$  W and  $2.4^\circ$  S to m13  
ngc6207 lies  $.3^\circ$  E and  $.4^\circ$  N of m13

date \_\_\_\_\_ site \_\_\_\_\_

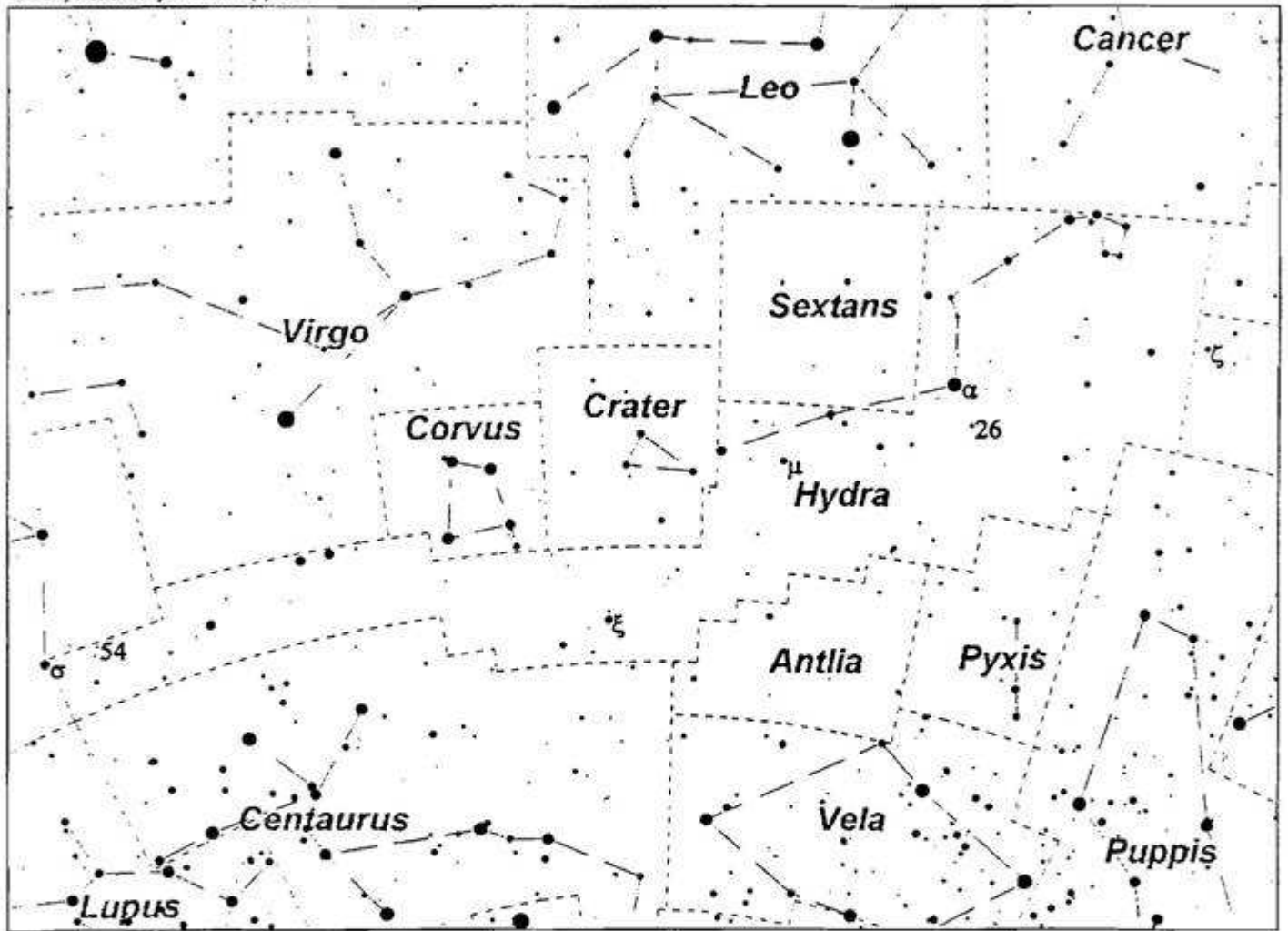
notes \_\_\_\_\_

ngc6229  
GC MAG 9.5  
RA 16 47.0 DEC 47 32  
SA2000 8 URAN 80

from  $\tau$  HER go  $.3^\circ$  S and  $5.1^\circ$  E to star 52 HER  
then  
from star 52 HER go  $.4^\circ$  W and  $1.5^\circ$  N to ngc6229

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



# HYDRA

\*SOUTHERN DECLINATION ADVISORY\*

ngc2548 (m48)  
OC MAG 5.5  
RA 8 13.8 DEC -5 48  
SA2000 12 URAN 230

from  $\zeta$  MON go  $1.3^\circ$  E and  $2.8^\circ$  S to ngc2548  
\*sug targets 2506 Mon\*

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc2811  
GX MAG 11.5  
RA 9 16.3 DEC -16 18  
SA2000 12 URAN 278

from  $\alpha$  HYA go  $1.9^\circ$  W and  $3.3^\circ$  S to star 26 HYA  
then  
from star 26 HYA go  $.9^\circ$  W and  $4.4^\circ$  S to ngc2811

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3242  
PN MAG 8.5  
RA 10 24.8 DEC -18 38  
SA2000 13 URAN 325

from  $\mu$  HYA go  $.3^\circ$  W and  $1.8^\circ$  S to ngc3242

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*SUG SEXTANS SEARCH SEQUENCE OR GO ON TO NGC3621\*

ngc3621  
GX MAG 10.0  
RA 11 18.3 DEC -32 48  
SA2000 20 URAN 367

from  $\xi$  HYA go  $1.0^\circ$  S and  $3.1^\circ$  W to ngc3621

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

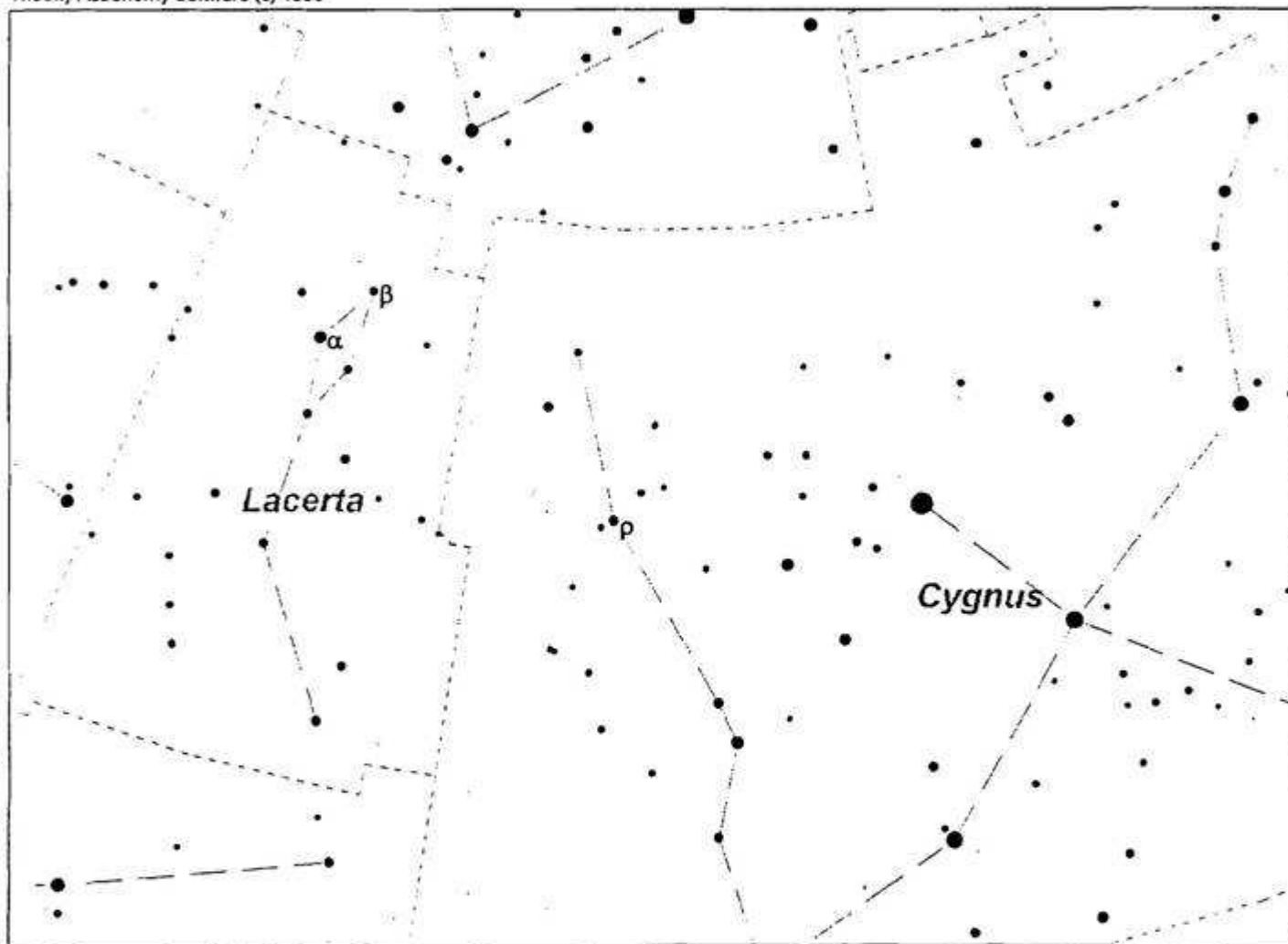
\*SUG CORVUS SEARCH SEQUENCE OR GO ON TO NGC5694\*

ngc5694  
GC MAG 10.5  
RA 14 39.6 DEC -26 32  
SA2000 21 URAN 333

from  $\sigma$  LIB go  $.2^\circ$  S and  $4.1^\circ$  W to star 54 HYA  
then  
from star 54 HYA go  $1.1^\circ$  S and  $1.4^\circ$  W to ngc5694

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_





# LACERTA

ngc7209  
OC MAG 7.0  
RA 22 05.2 DEC 46 30  
SA2000 9 URAN 86/87

from  $\rho$  CYG go  $.9^\circ$  N and  $5.4^\circ$  E to ngc7209

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc7243  
OC MAG 6.5  
RA 22 15.3 DEC 49 53  
SA2000 9 URAN 87

from ngc7209 go  $1.7^\circ$  E and  $3.3^\circ$  N to ngc7243

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc7296  
OC MAG 9.5  
RA 22 28.2 DEC 52 17  
SA2000 9 URAN 57

from ngc7243 go  $.4^\circ$  N and  $2.5^\circ$  E to  $\alpha$  LAC

then

from  $\alpha$  LAC go  $.5^\circ$  W and  $2.0^\circ$  N to ngc7296

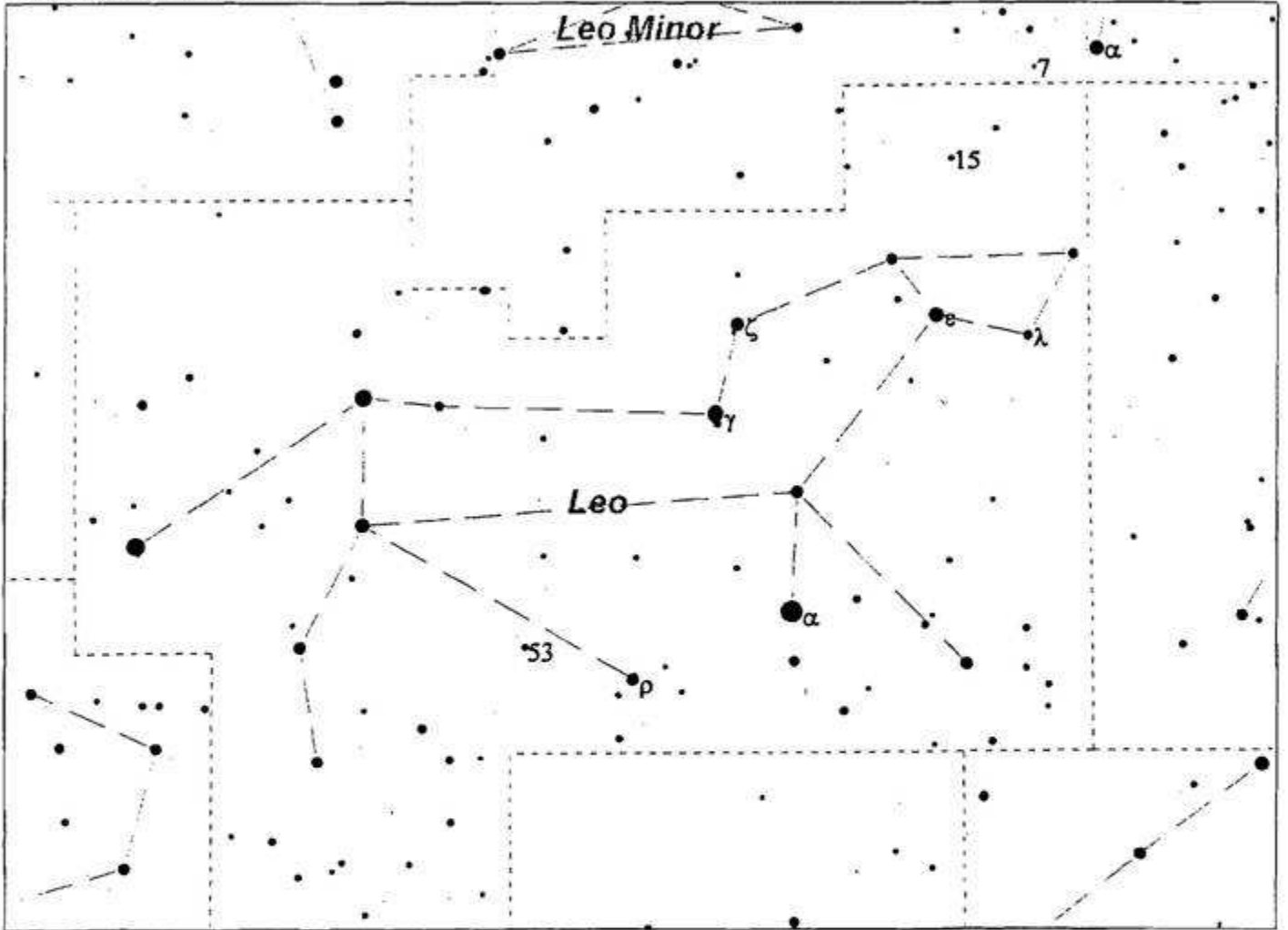
OR

from  $\beta$  LAC go  $.7^\circ$  E to ngc7296

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*ANDROMEDA SEARCH SEQUENCE BEGINS AT  $\lambda$  AND\*



# LEO

ngc2964  
GX MAG 11.5  
RA 9 42.9 DEC 31 51  
SA2000 6 URAN 104

from  $\epsilon$  LEO go  $.5^\circ$  W and  $6.2^\circ$  N to star 15 LEO  
then  
from star 15 LEO go  $.2^\circ$  W and  $1.9^\circ$  N to ngc2964  
OR  
from  $\alpha$  LYN go  $.7^\circ$  S and  $2.4^\circ$  E to star 7 LMI  
then  
from star 7 LMI go  $1.8^\circ$  S and  $2.6^\circ$  E to ngc2964  
\*sug targets 2859 LMi and 2782, 2683 Lyn\*

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc2903  
GX MAG 9.0  
RA 9 32.1 DEC 21 29  
SA2000 6 URAN 143

from  $\lambda$  LEO go  $.1^\circ$  E and  $1.5^\circ$  S to ngc2903

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3193  
GX MAG 11.0  
RA 10 18.5 DEC 21 53  
SA2000 6 URAN 144

from  $\zeta$  LEO go  $.4^\circ$  E and  $1.5^\circ$  S to ngc3193

date \_\_\_\_\_ site \_\_\_\_\_

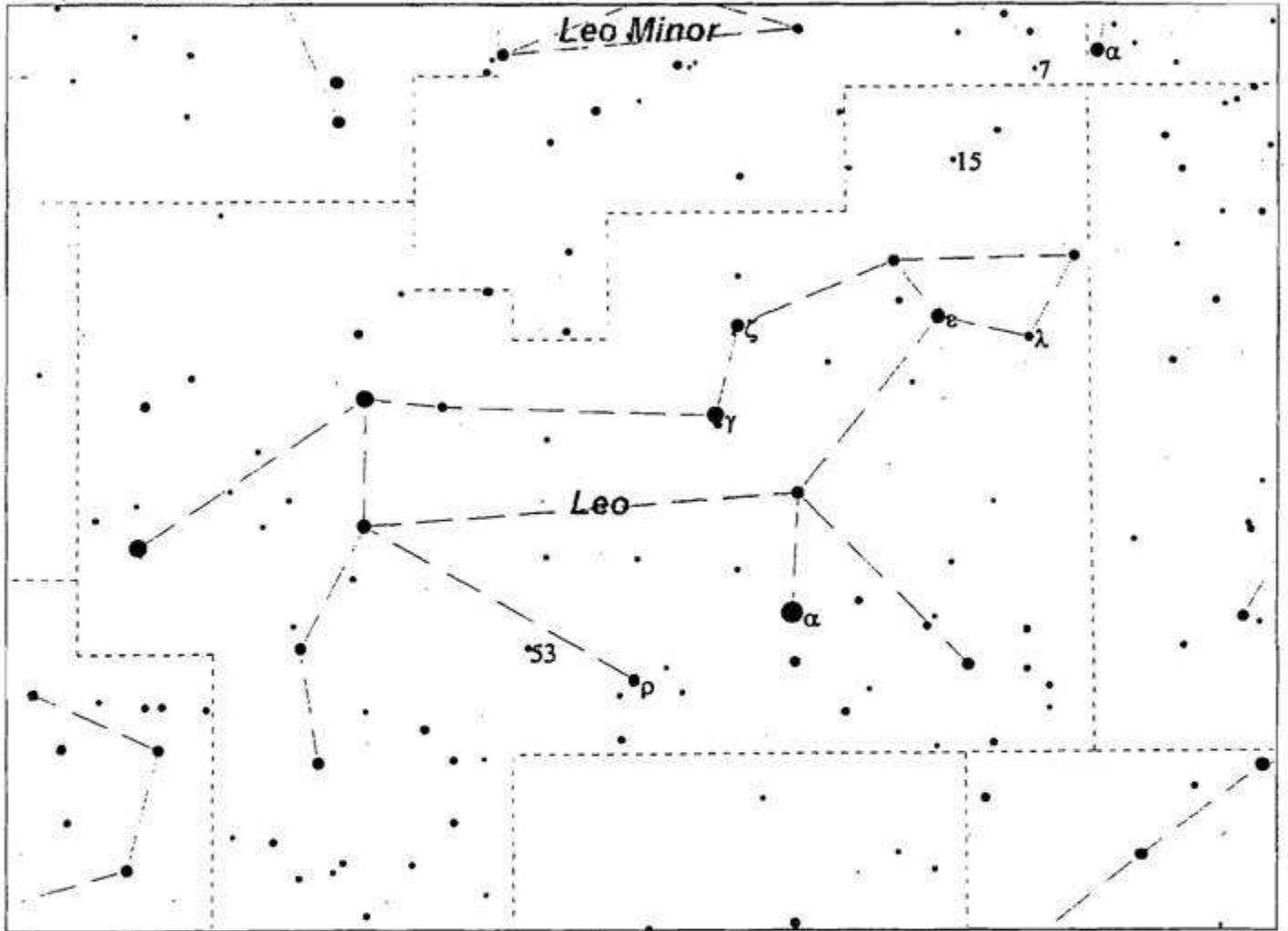
notes \_\_\_\_\_

ngc3190  
GX MAG 11.0  
RA 10 18.1 DEC 21 49  
SA2000 6 URAN 144

ngc3190 lies  $.1^\circ$  SW of ngc3193

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



**LEO** (continued)

ngc3227  
GX MAG 11.0  
RA 10 23.6 DEC 19 51  
SA2000 6 URAN 144

from ngc3190 go  $.4^{\circ}$  E and  $2.0^{\circ}$  S to  $\gamma$  LEO  
then  
from  $\gamma$  LEO go  $.8^{\circ}$  E to ngc3227

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3226  
GX MAG 11.5  
RA 10 23.5 DEC 19 53  
SA2000 6 URAN 144

ngc3226 lies 2 arcminutes NW of ngc3227

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3379 (m105)  
GX MAG 9.5  
RA 10 47.8 DEC 12 35  
SA2000 13 URAN 190

from  $\rho$  LEO go  $1.2^{\circ}$  N and  $4.1^{\circ}$  E to star 53 LEO  
then  
from star 53 LEO go  $.4^{\circ}$  W and  $2.0^{\circ}$  N to ngc3379  
OR  
from  $\alpha$  LEO go  $.6^{\circ}$  N and  $9.6^{\circ}$  E to ngc3379

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3384  
GX MAG 10.0  
RA 10 48.2 DEC 12 38  
SA2000 13 URAN 190

ngc3384 lies  $.05^{\circ}$  N and  $.1^{\circ}$  E of ngc3379

date \_\_\_\_\_ site \_\_\_\_\_

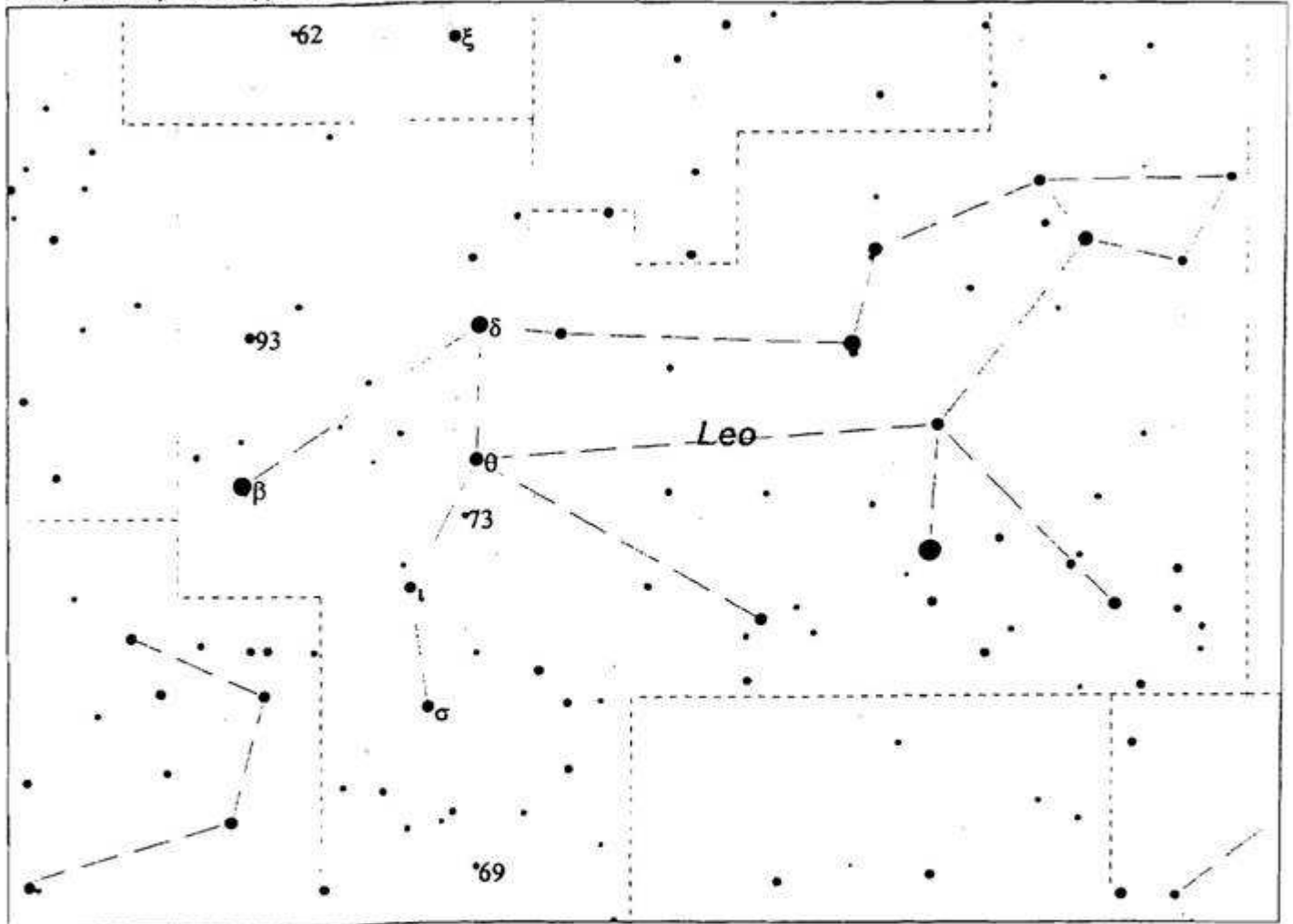
notes \_\_\_\_\_

ngc3412  
GX MAG 10.5  
RA 10 50.8 DEC 13 24  
SA2000 13 URAN 190

from ngc3384 go  $.6^{\circ}$  E and  $.8^{\circ}$  N to ngc3412

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



## LEO (continued)

ngc3377  
GX MAG 10.0  
RA 10 47.7 DEC 13 59  
SA2000 13 URAN 190

from ngc3412 go  $.6^{\circ}$  N and  $.8^{\circ}$  W to ngc3377

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3489  
GX MAG 10.5  
RA 11 00.3 DEC 13 54  
SA2000 13 URAN 191

from ngc3377 go  $.1^{\circ}$  S and  $3.1^{\circ}$  E to ngc3489

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3593  
GX MAG 11.0  
RA 11 14.6 DEC 12 49  
SA2000 13 URAN 191

from ngc3489 go  $1.1^{\circ}$  S and  $3.5^{\circ}$  E to ngc3593  
OR  
from  $\theta$  LEO go  $.4^{\circ}$  E and  $2.1^{\circ}$  S to star 73 LEO  
then  
from star 73 LEO go  $.3^{\circ}$  W and  $.5^{\circ}$  S to ngc3593

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3628  
GX MAG 9.5  
RA 11 20.3 DEC 13 36  
SA2000 13 URAN 191

from ngc3593 return  $.3^{\circ}$  E and  $.5^{\circ}$  N to star 73 LEO  
then  
from star 73 LEO go  $1.1^{\circ}$  E and  $.3^{\circ}$  N to ngc3628

date \_\_\_\_\_ site \_\_\_\_\_

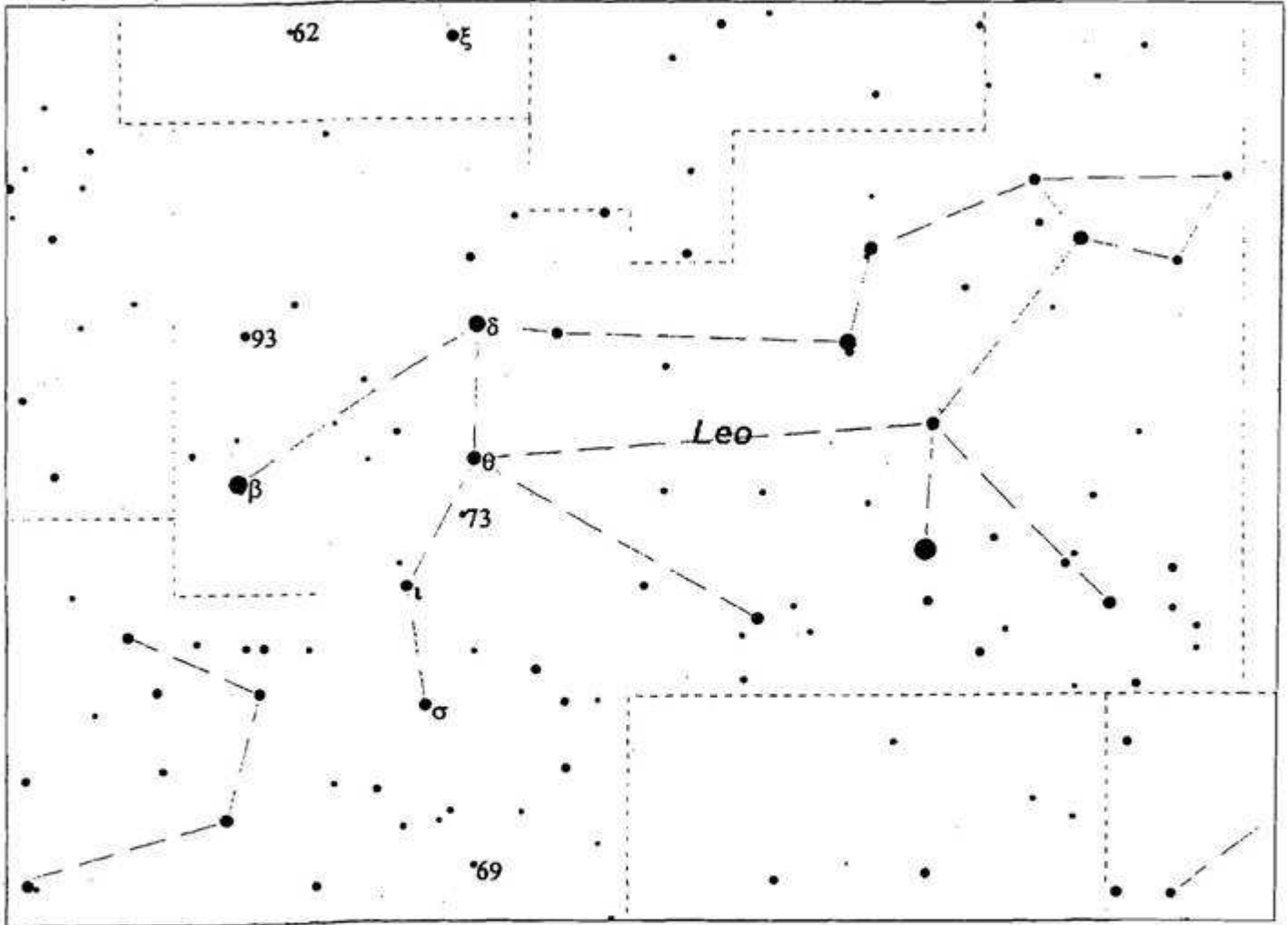
notes \_\_\_\_\_

ngc3810  
GX MAG 11.0  
RA 11 41.0 DEC 11 29  
SA2000 13 URAN 192

from  $\iota$  LEO go  $.9^{\circ}$  N and  $4.2^{\circ}$  E to ngc3810  
OR  
from  $\beta$  LEO go  $2.0^{\circ}$  W and  $3.1^{\circ}$  S to ngc3810

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_





**LEO** (continued)

ngc3640  
GX MAG 10.5  
RA 11 21.1 DEC 3 15  
SA2000 13 URAN 236

from  $\sigma$  LEO go 2.8° S to ngc3640

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3521  
GX MAG 9.0  
RA 11 05.9 DEC 0 02  
SA2000 13 URAN 236

from ngc3640 go 1.8° W and 3.3° S to star 69 LEO  
then  
from star 69 LEO go 2.0° W to ngc3521  
\*sug targets 4030 and 4179 Vir\*

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3655  
GX MAG 11.5  
RA 11 22.9 DEC 16 36  
SA2000 6 URAN 191

from  $\theta$  LEO go 1.1° N and 2.1° E to ngc3655

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3686  
GX MAG 11.5  
RA 11 27.7 DEC 17 14  
SA2000 6 URAN 191

from ngc3655 go .6° N and 1.2° E to ngc3686

date \_\_\_\_\_ site \_\_\_\_\_

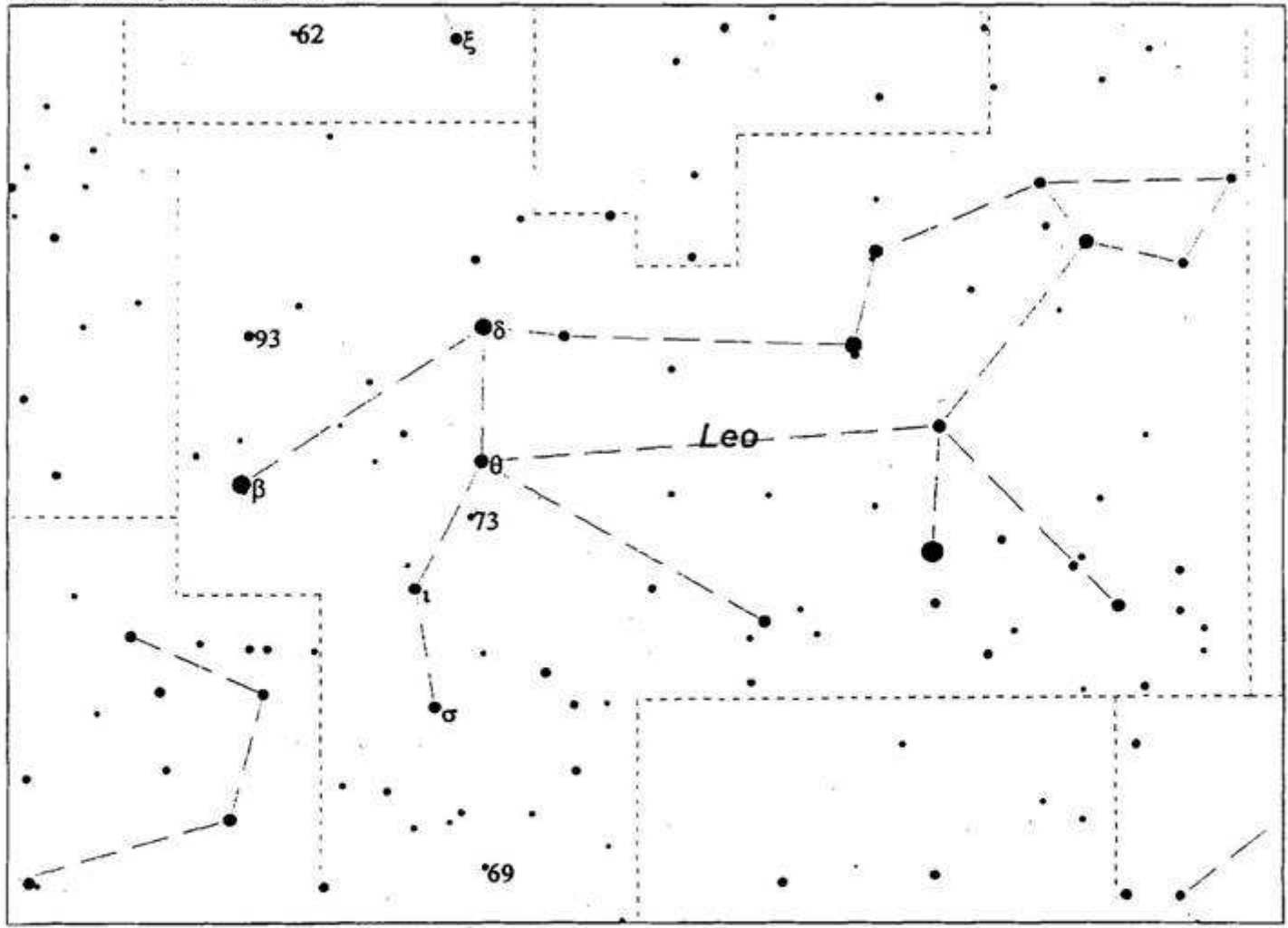
notes \_\_\_\_\_

ngc3626  
GX MAG 11.0  
RA 11 20.0 DEC 18 22  
SA2000 6 URAN 146

from ngc3686 go 1.1° N and 1.8° W to ngc3626  
OR  
from  $\delta$  LEO go 1.4° E and 2.2° S to ngc3626

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



# LEO (continued)

ngc3608

GX MAG 11.0  
RA 11 16.9 DEC 18 10  
SA2000 6 URAN 146

from ngc3626 go .2° S and .7° W to ngc3608

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3607

GX MAG 10.5  
RA 11 16.9 DEC 18 04  
SA2000 6 URAN 146

ngc3607 lies .1° S of ngc3608

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3900

GX MAG 11.5  
RA 11 49.2 DEC 27 02  
SA2000 6 URAN 147

from star 93 LEO go .3° E and 6.8° N to ngc3900

OR

from  $\xi$  UMA go .2° N and 5.0° E to star 62 UMA

then

from star 62 UMA go 1.6° E and 4.8° S to ngc3900

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3912

GX MAG 13.0  
RA 11 50.1 DEC 26 29  
SA2000 6 URAN 147

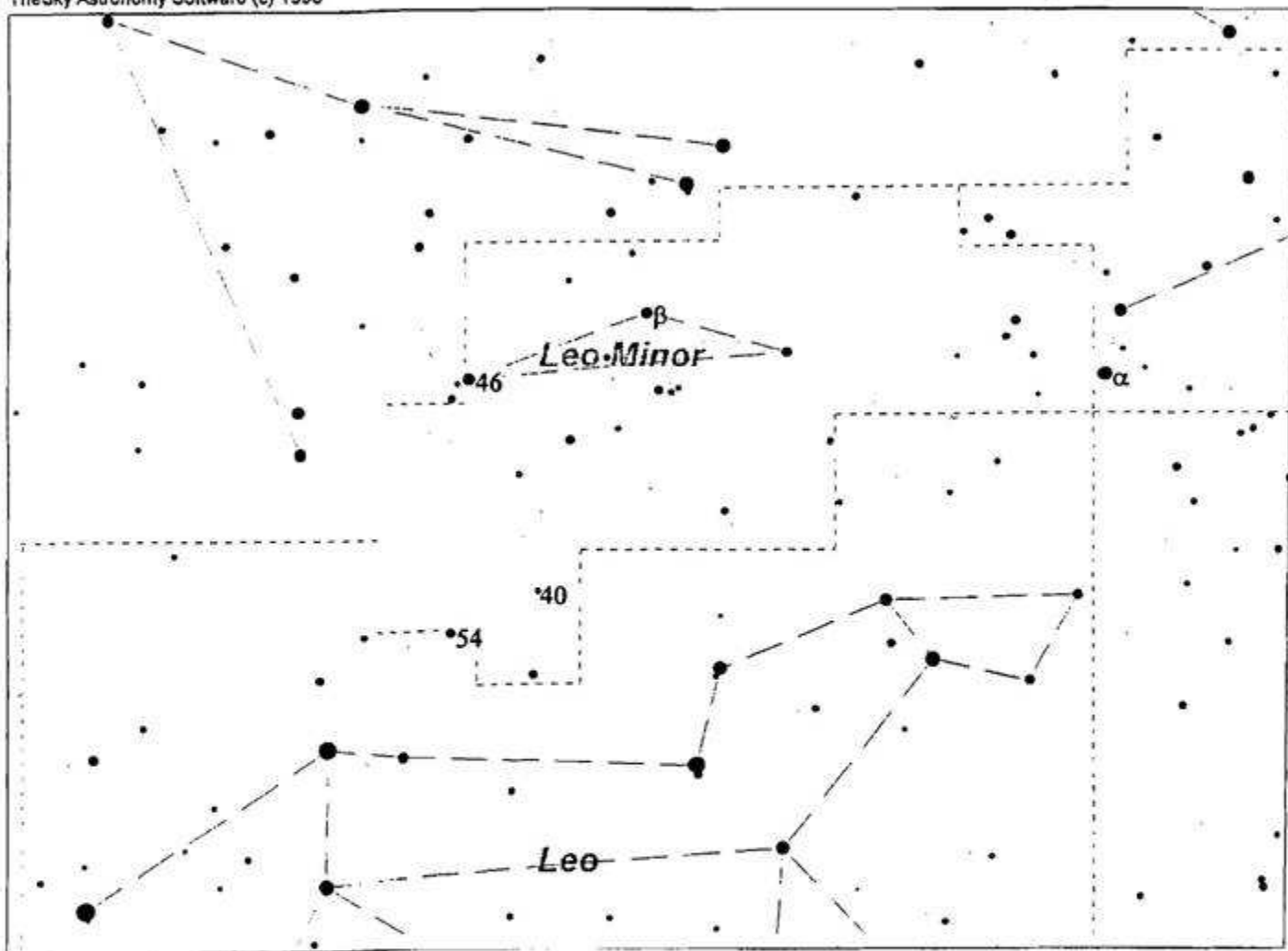
from ngc3900 go .2° E and .5° S to ngc3912

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*NORTHERN COMA BERENICES SEARCH SEQUENCE BEGINS AT  $\gamma$  COM\*

\*LEO MINOR SEARCH SEQUENCE BEGINS AT  $\alpha$  LYN\*



# LEO MINOR

ngc2859  
GX MAG 11.0  
RA 9 24.3 DEC 34 32  
SA2000 6 URAN 103

from  $\alpha$  LYN go  $.1^\circ$  N and  $.7^\circ$  E to ngc2859  
\*sug targets 2964 Leo and 2782, 2683 Lyn\*

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3344  
GX MAG 10.0  
RA 10 43.6 DEC 24 55  
SA2000 6 URAN 145

from star 54 LEO go  $.2^\circ$  N and  $2.7^\circ$  W to ngc3344

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3277  
GX MAG 12.0  
RA 10 32.9 DEC 28 30  
SA2000 6 URAN 145

from ngc3344 go  $.1^\circ$  W and  $1.4^\circ$  N to star 40 LMI  
then  
from star 40 LMI go  $2.3^\circ$  W and  $2.2^\circ$  N to ngc3277

date \_\_\_\_\_ site \_\_\_\_\_

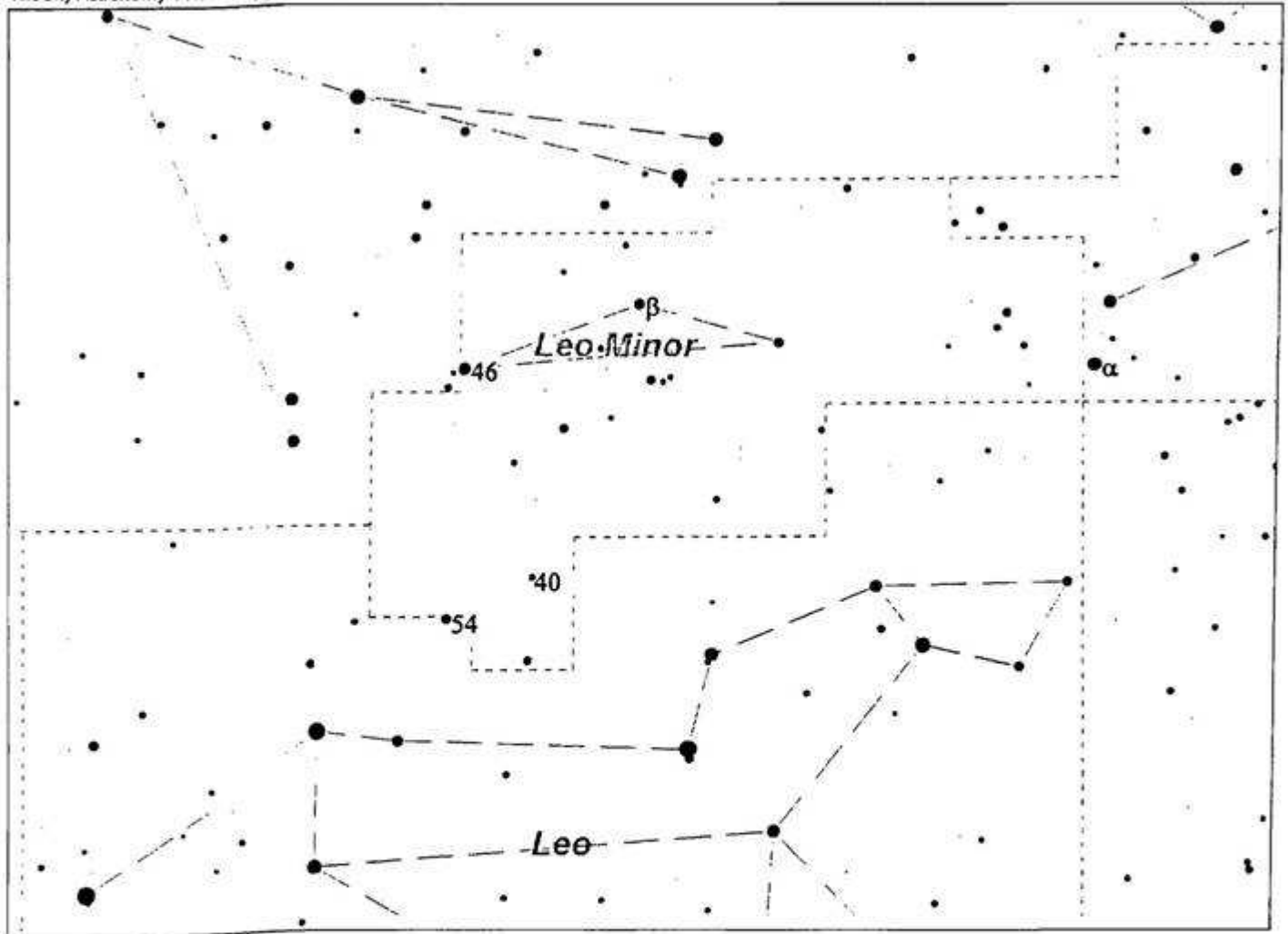
notes \_\_\_\_\_

ngc3245  
GX MAG 11.0  
RA 10 27.3 DEC 28 30  
SA2000 6 URAN 145

from ngc3277 go  $1.2^\circ$  W to ngc3245

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



## LEO MINOR (continued)

ngc3414

GX MAG 11.0

RA 10 51.3 DEC 27 58

SA2000 6 URAN 145

from ngc3245 go .5° S and 5.0° E to star 44 LMI  
then

from star 44 LMI go .3° E to ngc3414

OR

from star 54 LEO go 1.4° W and 3.2° N to star 44 LMI  
then

from star 44 LMI go .3° E to ngc3414

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3504

GX MAG 11.0

RA 11 02.0 DEC 28 07

SA2000 6 URAN 146

from ngc3414 go 2.6° E to ngc3504

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3486

GX MAG 10.5

RA 11 00.5 DEC 28 59

SA2000 6 URAN 146

from ngc3504 go .6° W and 1.0° N to ngc3486

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3395

GX MAG 12.0

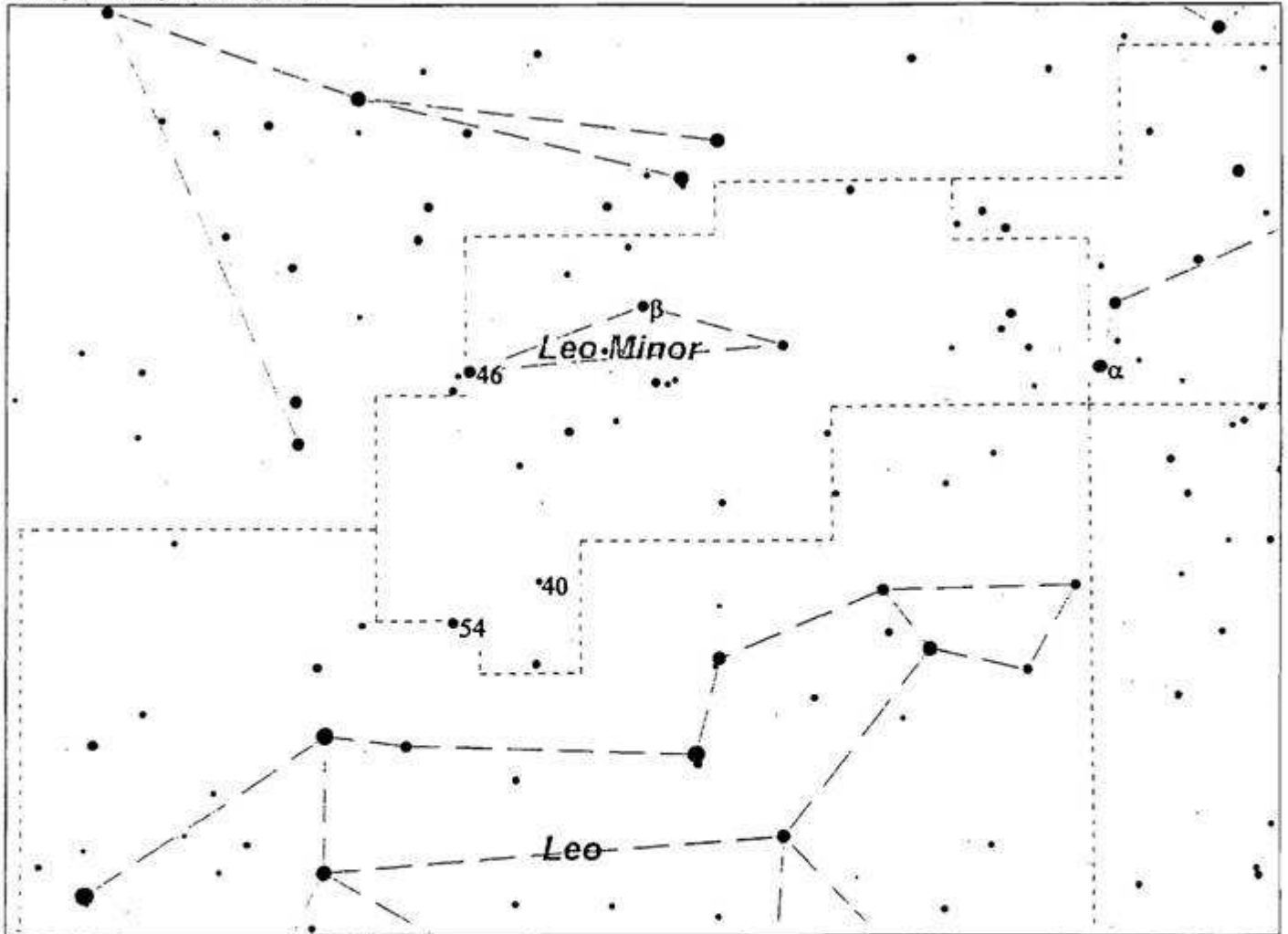
RA 10 49.9 DEC 32 59

SA2000 6 URAN 105

from star 46 LMI go .7° W and 1.2° S to ngc3395

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_





# LEO MINOR (continued)

ngc3432  
GX MAG 11.5  
RA 10 52.5 DEC 36 37  
SA2000 6 URAN 105

from ngc3395 return 1.2° N and .7° E to star 46 LMI  
then  
from star 46 LMI go .2° W and 2.4° N to ngc3432

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

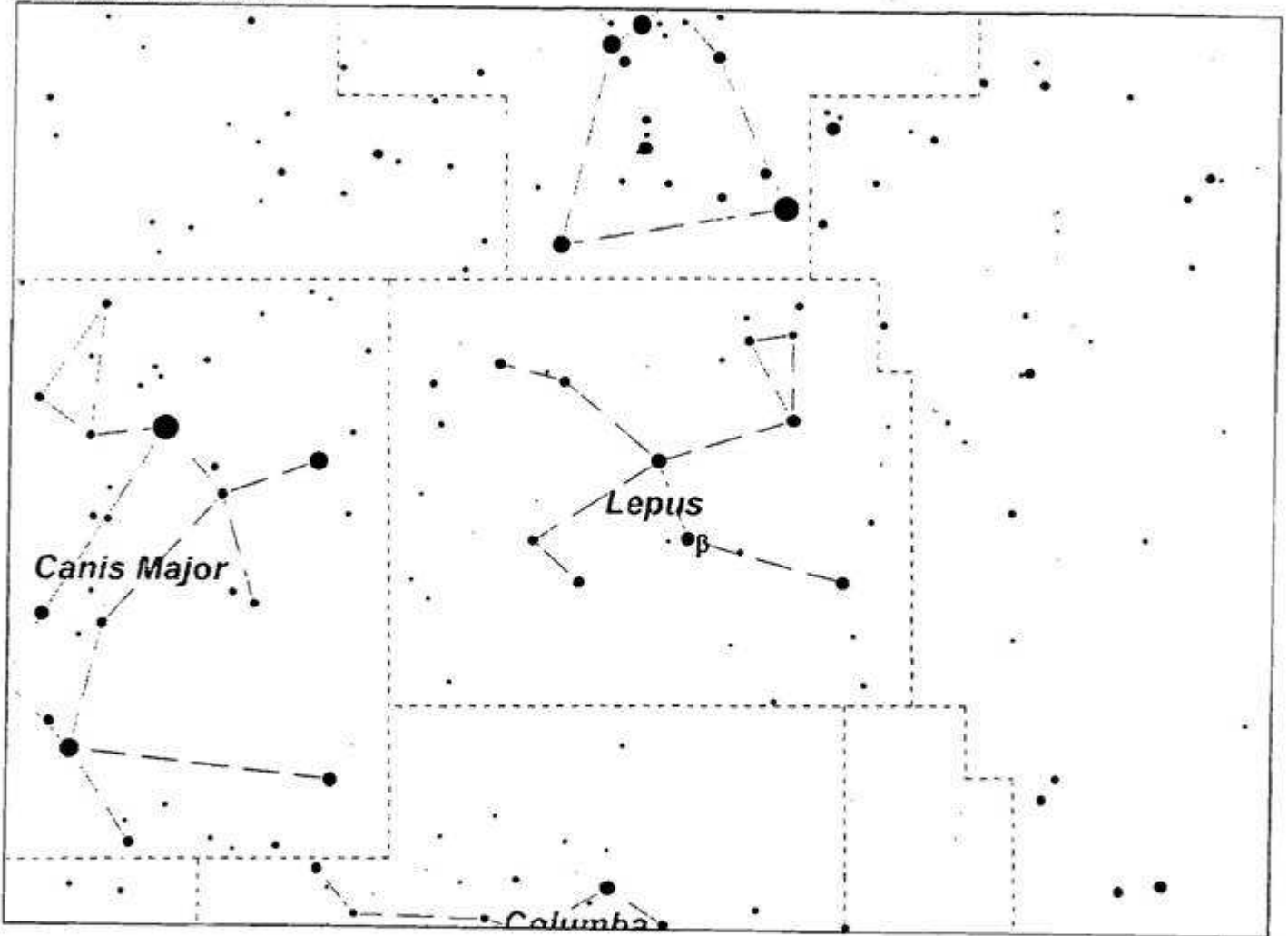
ngc3294  
GX MAG 12.0  
RA 10 36.2 DEC 37 19  
SA2000 6 URAN 105

from ngc3432 go .7° N and 3.2° W to ngc3294  
OR  
from β LMI go .6° N and 1.7° E to ngc3294

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*NORTHERN COMA BERENICES SEARCH SEQUENCE BEGINS AT γ COM\*  
\*CENTRAL URSA MAJOR SEARCH SEQUENCE BEGINS AT μ UMA\*



# LEPUS

\*SOUTHERN DECLINATION ADVISORY\*

ngc1964

GX MAG 11.0

RA 5 33.3 DEC -21 57

SA2000 19 URAN 315

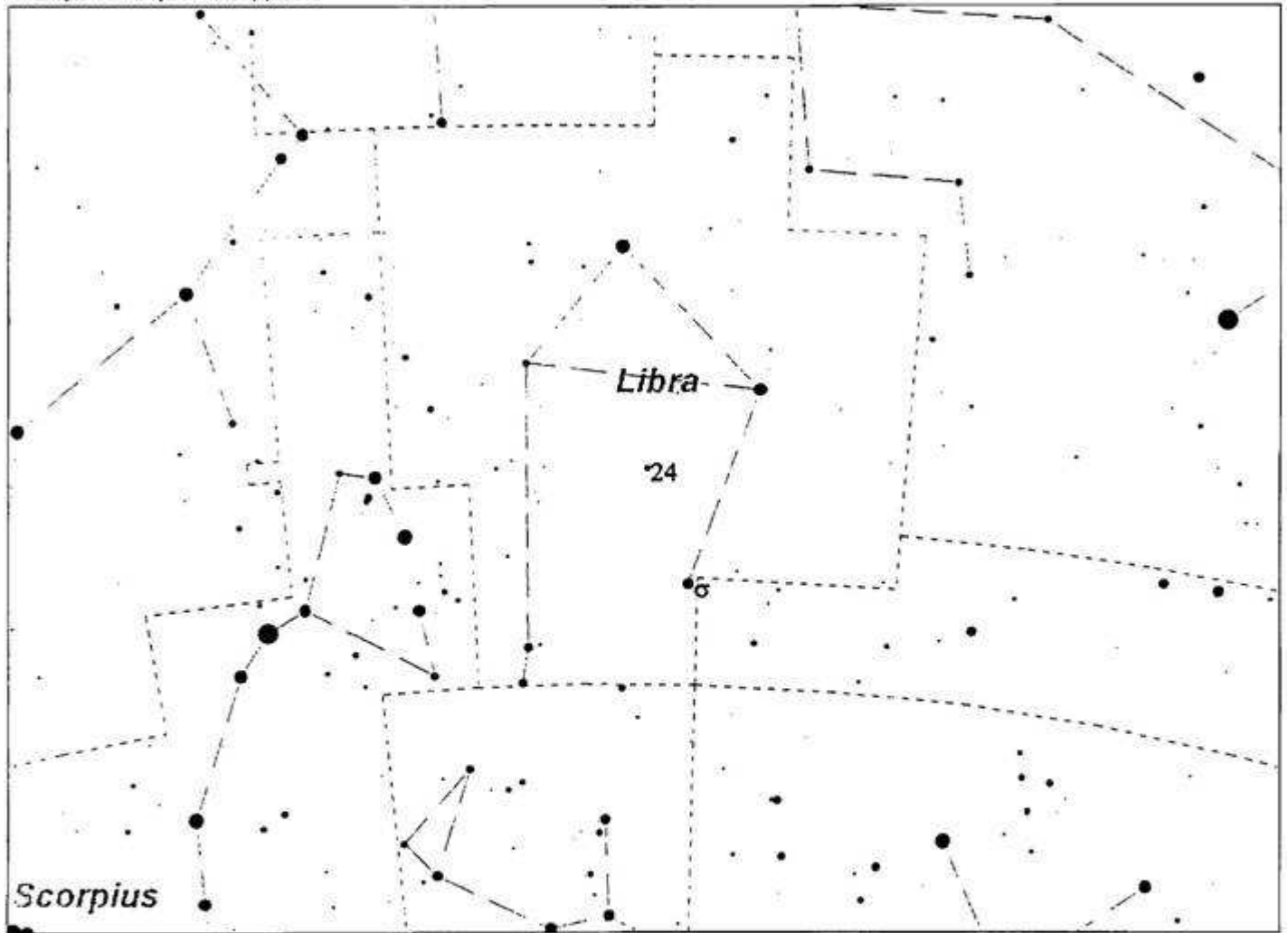
from  $\beta$  LEP go 1.2° E and 1.2° S to ngc1964

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*CANIS MAJOR SEARCH SEQUENCE BEGINS AT  $\beta$  CMA\*

\*ORION SEARCH SEQUENCE BEGINS AT  $\beta$  ERI\*



# LIBRA

\*SOUTHERN DECLINATION ADVISORY\*

ngc5897  
GC MAG 9.0  
RA 15 17.4 DEC -21 01  
SA2000 21 URAN 334

from star 24 LIB go 1.2° E and 1.2° S to ngc5897

OR

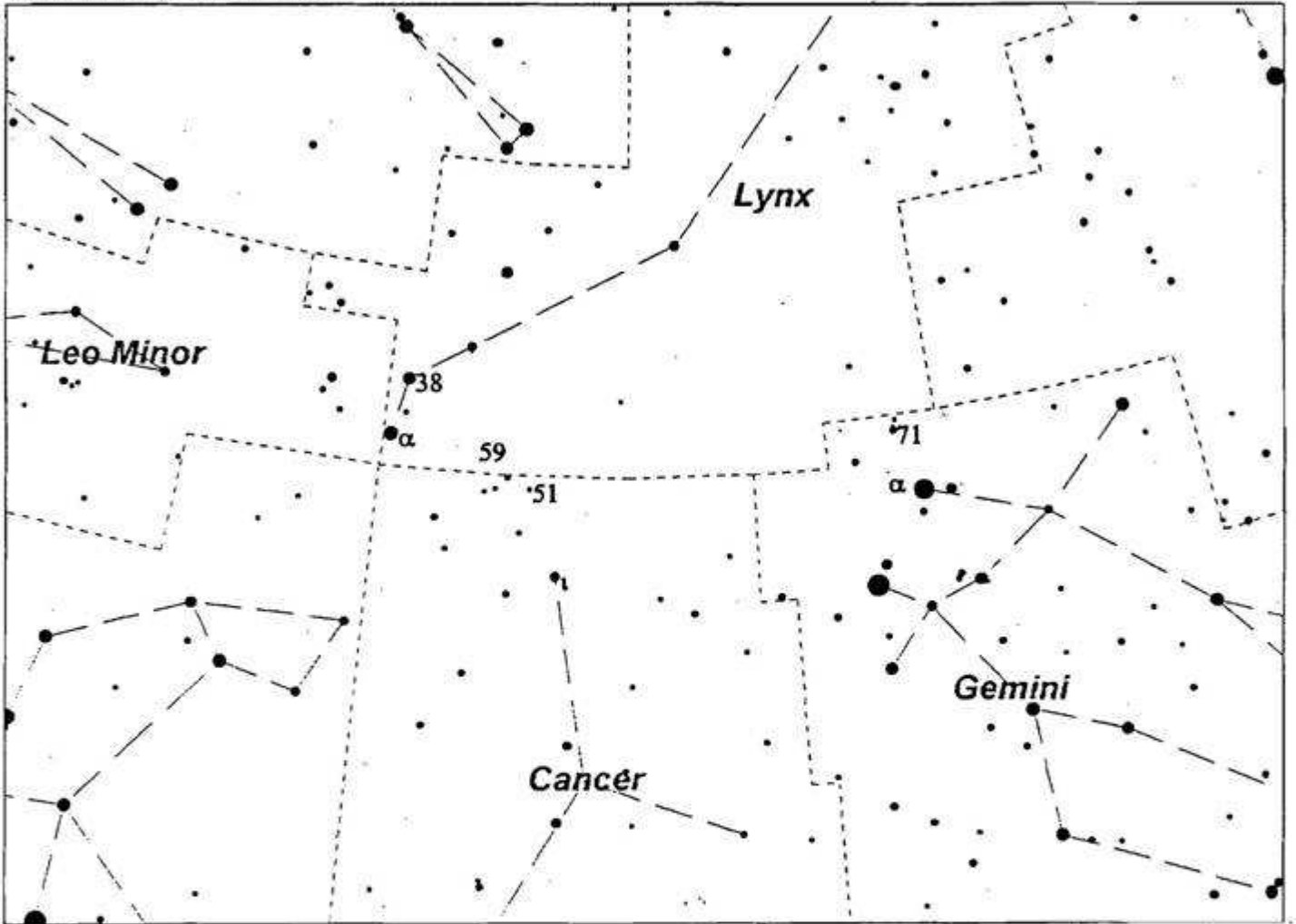
from  $\sigma$  LIB go 3.0° E and 4.2° N to ngc5897

\*sug target 5694 Hya\*

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*SCORPIUS SEARCH SEQUENCE BEGINS AT  $\alpha$  SCO\*



# LYNX

ngc2419  
GC MAG 10.5  
RA 7 38.1 DEC 38 53  
SA2000 21 URAN 100

from  $\alpha$  GEM go  $1.0^\circ$  E and  $2.7^\circ$  N to star 71 GEM  
then  
from star 71 GEM go  $.2^\circ$  W and  $4.3^\circ$  N to ngc2419

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc2683  
GX MAG 10.0  
RA 8 52.8 DEC 33 25  
SA2000 6 URAN 103/102

from  $\alpha$  LYN go  $1.5^\circ$  S and  $5.1^\circ$  W to star 59 CNC  
then  
from star 59 CNC go  $.5^\circ$  N and  $.9^\circ$  W to ngc2683  
OR  
from  $\iota$  CNC go  $1.3^\circ$  E and  $3.7^\circ$  N to star 51 CNC  
then  
from star 51 CNC go  $.9^\circ$  N to ngc2683

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

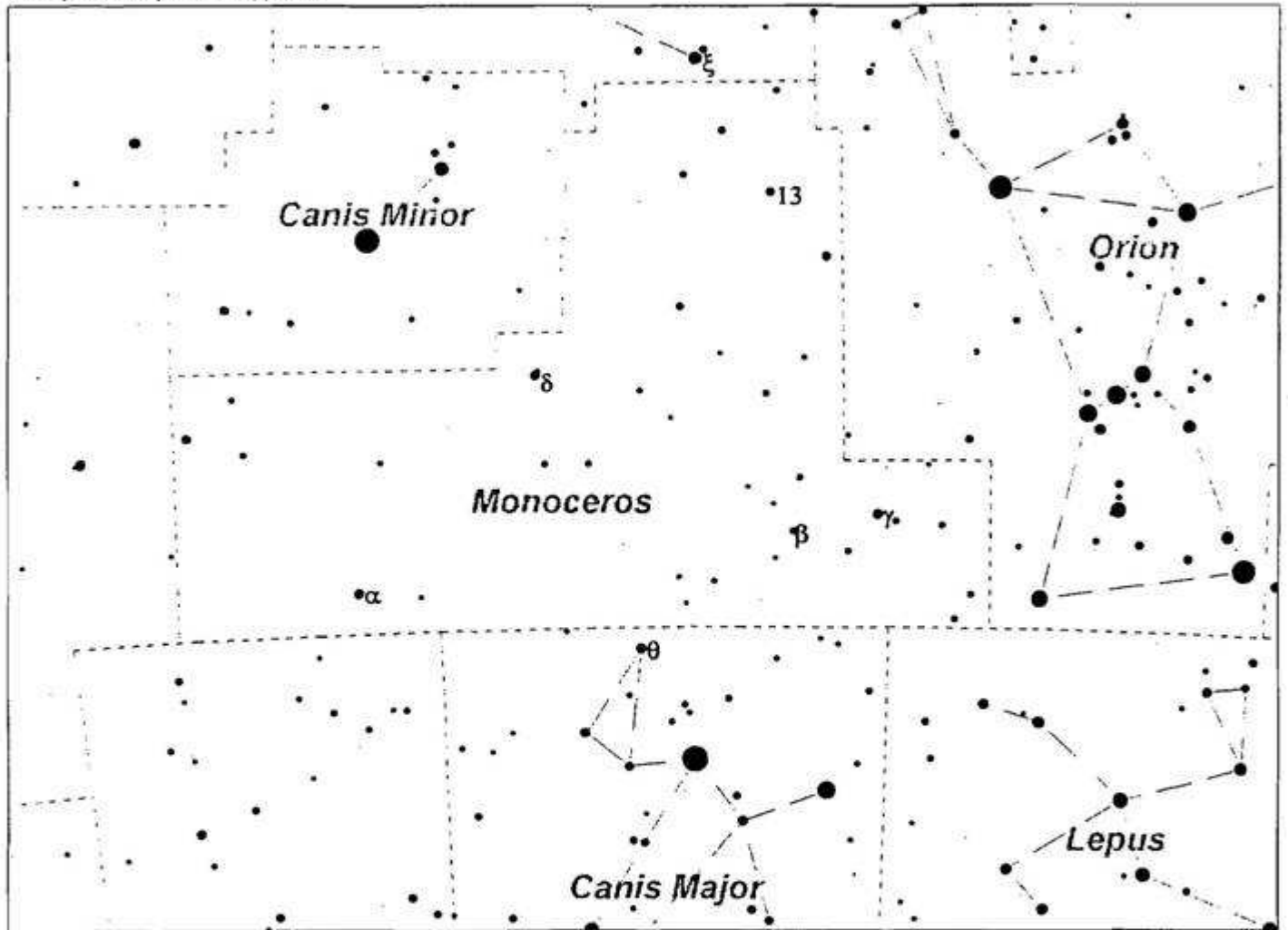
ngc2782  
GX MAG 11.5  
RA 9 14.1 DEC 40 07  
SA2000 6 URAN 103/70

from  $\alpha$  LYN go  $.5^\circ$  W and  $2.4^\circ$  N to star 38 LYN  
then  
from star 38 LYN go  $.9^\circ$  W and  $3.3^\circ$  N to ngc2782

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*LEO MINOR SEARCH SEQUENCE BEGINS AT  $\alpha$  LYNX\*





# MONOCEROS

ngc2264  
C/N MAG 4.0  
RA 6 41.1 DEC 9 53  
SA2000 12 URAN 182

from  $\xi$  GEM go 1.0° W and 3.0° S to ngc2264

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc2251  
OC MAG 7.5  
RA 6 34.7 DEC 8 22  
SA2000 12 URAN 182

from ngc2264 go 1.6° W and 1.5° S to ngc2251

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc2244  
C/N MAG 5.0  
RA 6 32.4 DEC 4 52  
SA2000 12 URAN 182

from ngc2251 go .4° W and 1.0° S to star 13 MON  
then  
from star 13 MON go .1° W and 2.5° S to ngc2244  
\*sug targets 2186, 2169, and 2194 Ori\*

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc2324  
OC MAG 8.5  
RA 7 04.2 DEC 1 03  
SA2000 12 URAN 228

from  $\delta$  MON go 1.5° N and 1.9° W to ngc2324

date \_\_\_\_\_ site \_\_\_\_\_

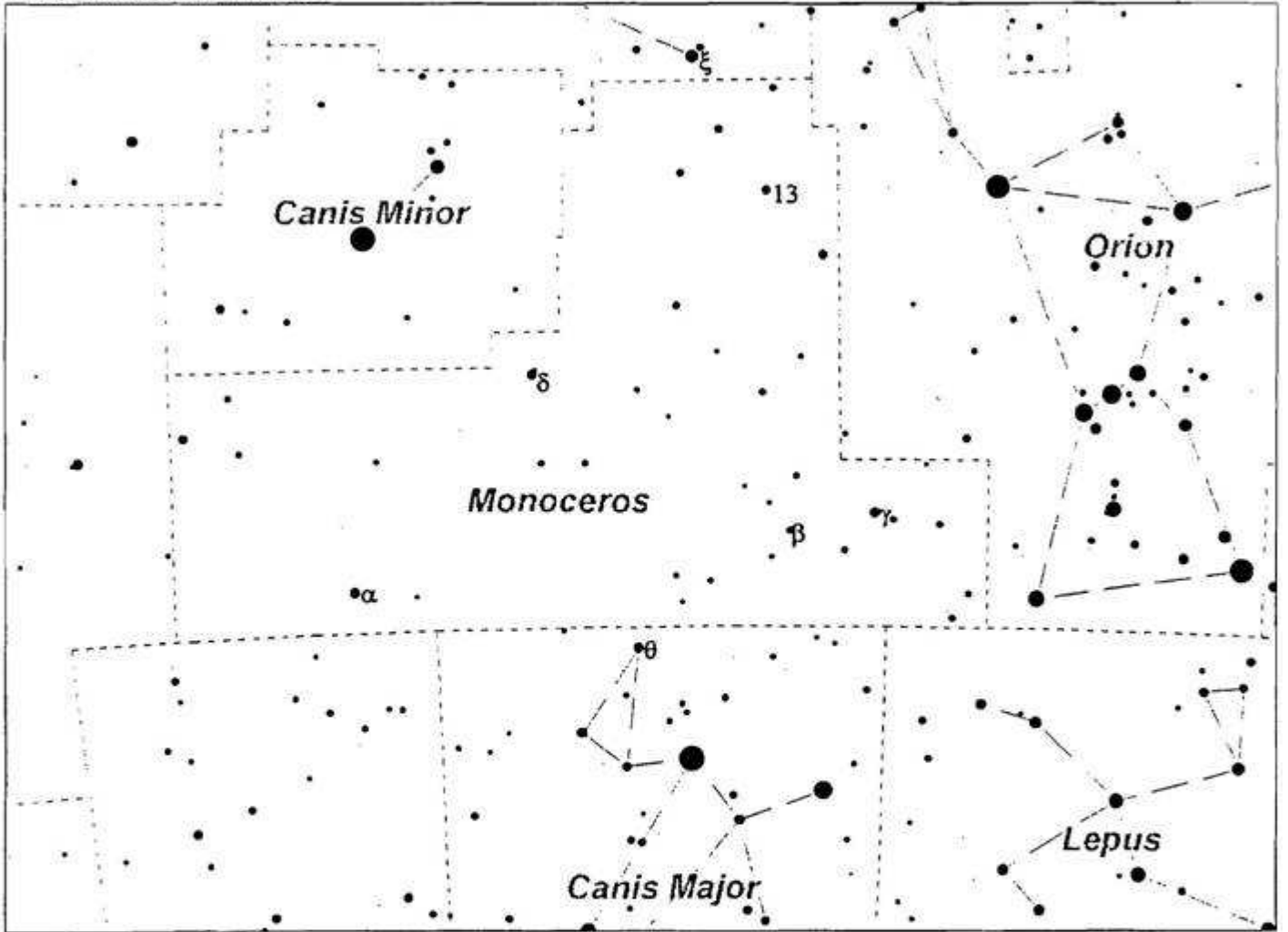
notes \_\_\_\_\_

ngc2301  
OC MAG 6.0  
RA 6 51.8 DEC 0 28  
SA2000 12 URAN 228

from ngc2324 go .6° S and 3.1° W to ngc2301

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



# MONOCEROS (continued)

ngc2286  
OC MAG 8.0  
RA 6 47.6 DEC -3 10  
SA2000 12 URAN 228

from ngc2301 go 1.1° W and 3.6° S to ngc2286

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc2311  
OC MAG 9.5  
RA 6 57.8 DEC -4 35  
SA2000 12 URAN 228

from ngc2286 go 1.4° S and 2.5° E to ngc2311

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc2232  
OC MAG 4.0  
RA 6 26.6 DEC -4 45  
SA2000 12 URAN 228/227

from ngc2311 go .2° S and 7.8° W to ngc2232

OR

from β MON go .5° W and 2.3° N to ngc2232

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc2215  
OC MAG 8.5  
RA 6 21.0 DEC -7 17  
SA2000 12 URAN 272

from β MON go .2° S and 1.9° W to ngc2215

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc2185  
DN MAG N/A  
RA 6 11.1 DEC -6 12  
SA2000 12 URAN 272

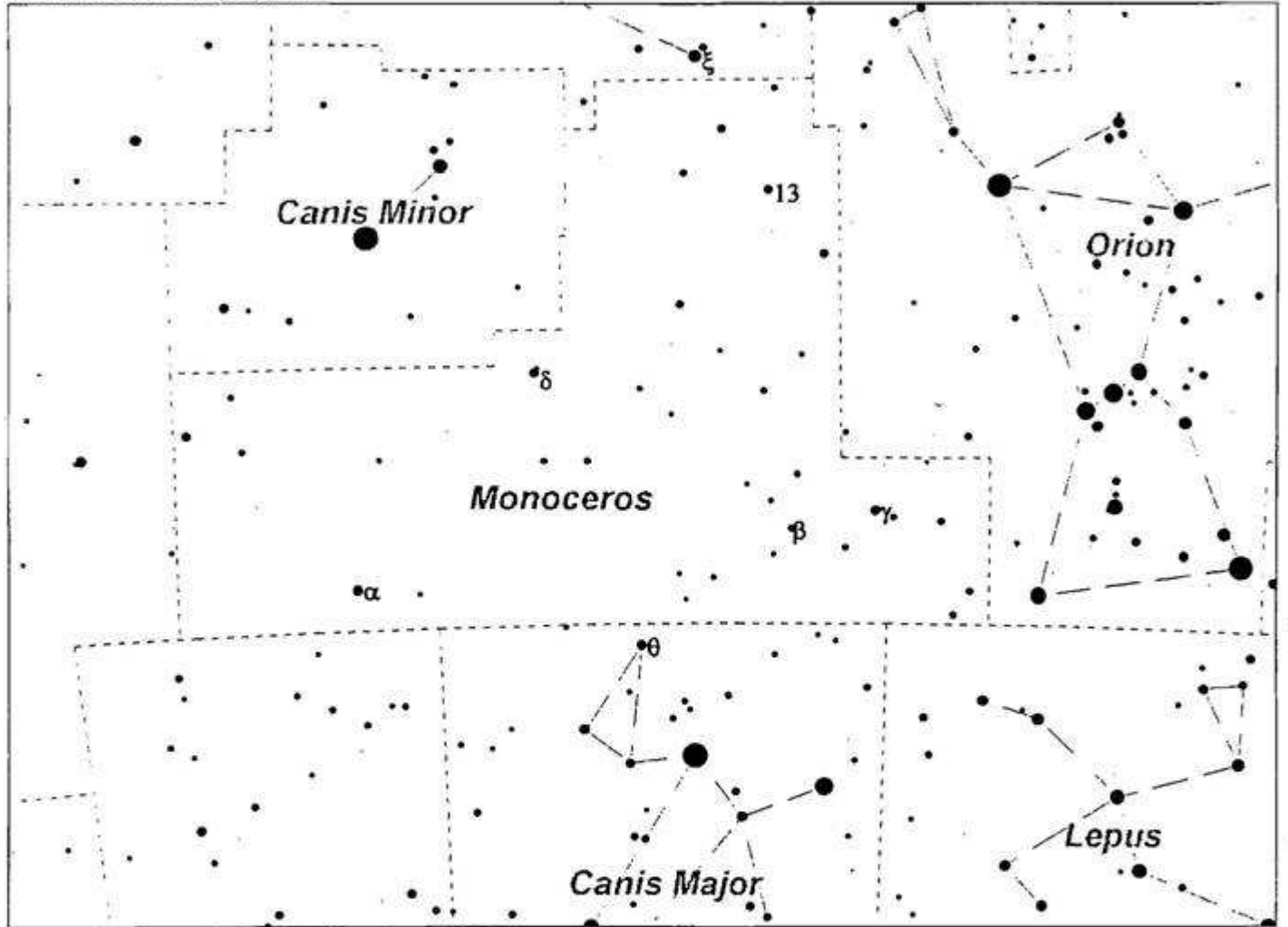
from ngc2215 go 1.0° N and 1.5° W to γ MON

then

from γ MON go .1° S and .9° W to ngc2185

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



# MONOCEROS (continued)

ngc2343  
OC MAG 7.0  
RA 7 08.3 DEC -10 39  
SA2000 12 URAN 273

from  $\theta$  CMA go 1.4° N and 3.5° E to ngc2343

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc2335  
OC MAG 7.5  
RA 7 06.6 DEC -10 05  
SA2000 12 URAN 273

from ngc2343 go .4° W and .6° N to ngc2335

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc2353  
OC MAG 6.0  
RA 7 14.6 DEC -10 18  
SA2000 12 URAN 273

from ngc2335 go .2° S and 1.9° E to ngc2353

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

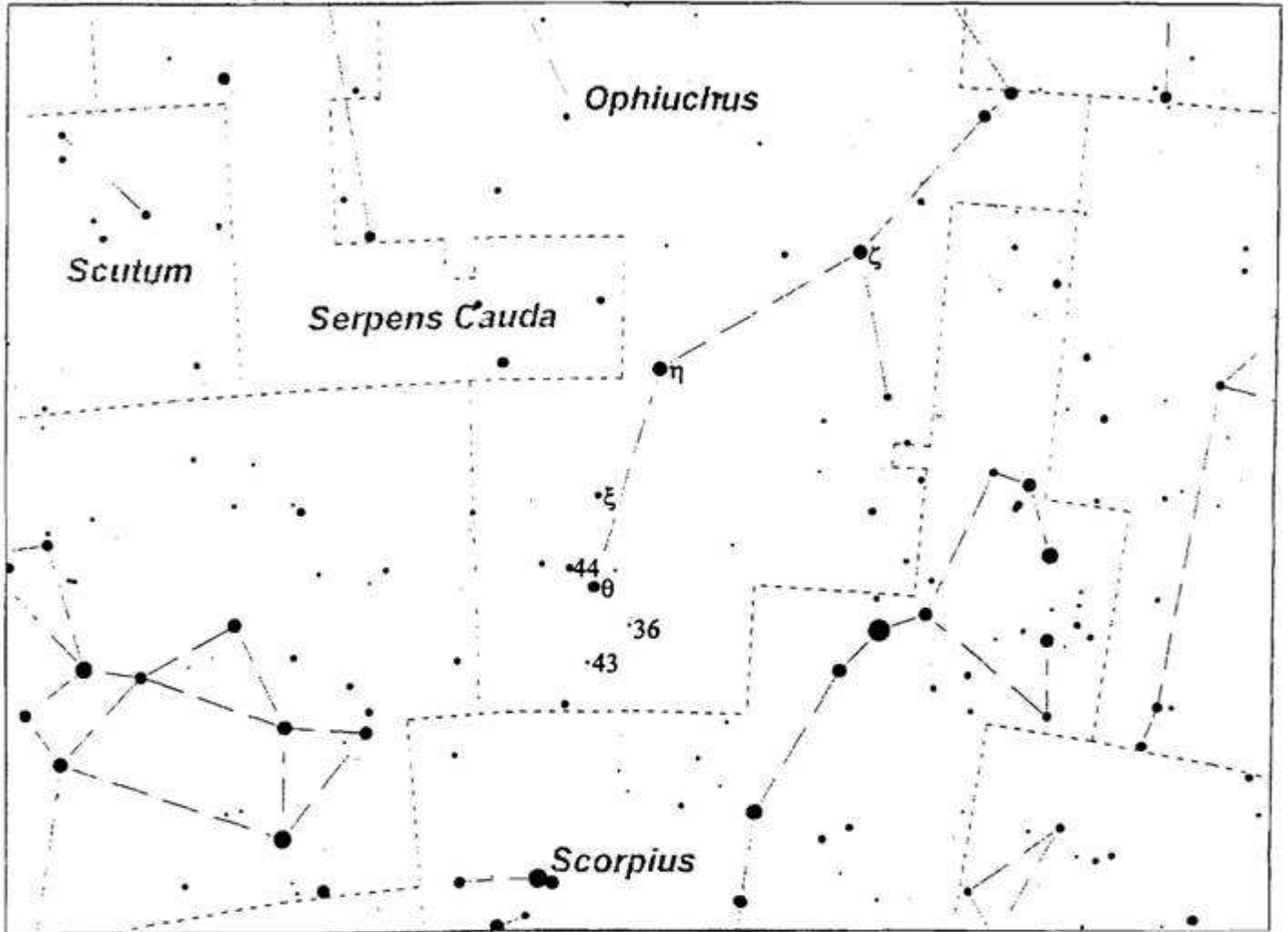
ngc2506  
OC MAG 8.0  
RA 8 00.2 DEC -10 47  
SA2000 12 URAN 275

from  $\alpha$  MON go 1.2° S and 4.6° E to ngc2506  
\*sug target 2548 Hya\*

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*PUPPIS SEARCH SEQUENCE BEGINS AT  $\gamma$  CMA\*



# OPHIUCHUS

\*SOUTHERN DECLINATION ADVISORY\*

ngc6171 (m107)  
GC MAG 8.0  
RA 16 32.5 DEC -13 03  
SA2000 15 URAN 291

from  $\zeta$  OPH go  $1.2^\circ$  W and  $2.5^\circ$  S to ngc6171  
\*sug target 6118 Ser\*

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc6356  
GC MAG 8.5  
RA 17 23.6 DEC -17 49  
SA2000 22 URAN 292

from  $\eta$  OPH go  $2.1^\circ$  S and  $3.2^\circ$  E to ngc6356

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc6342  
GC MAG 10.0  
RA 17 21.2 DEC -19 35  
SA2000 22 URAN 337

from ngc6356 go  $.6^\circ$  W and  $1.8^\circ$  S to ngc6342  
OR  
from  $\xi$  OPH go  $1.5^\circ$  N to ngc6342

date \_\_\_\_\_ site \_\_\_\_\_

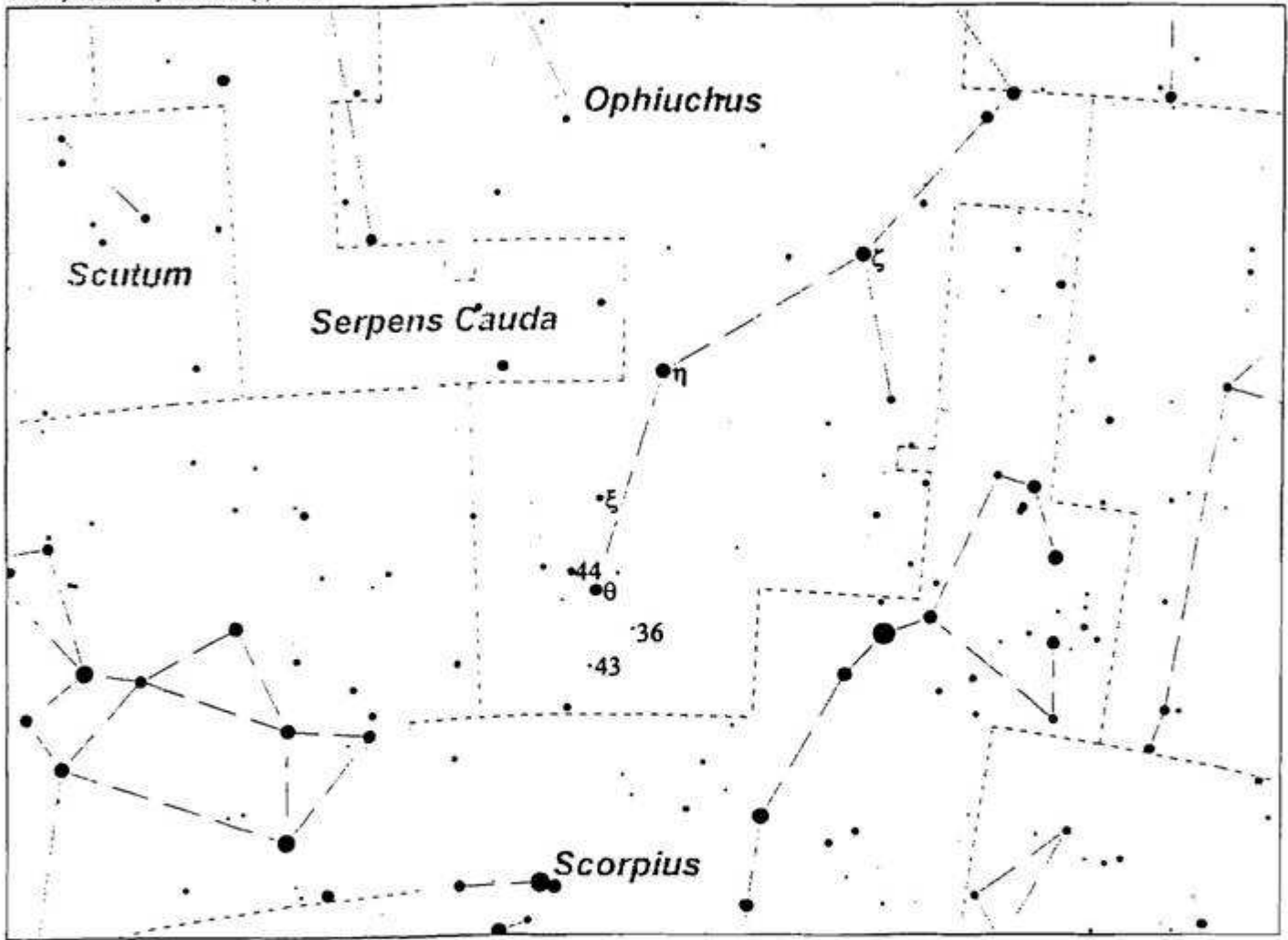
notes \_\_\_\_\_

ngc6287  
GC MAG 9.5  
RA 17 05.2 DEC -22 42  
SA2000 22 URAN 337

from ngc6342 return  $1.5^\circ$  S to  $\xi$  OPH  
then  
from  $\xi$  OPH go  $1.6^\circ$  S and  $3.6^\circ$  W to ngc6287

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_





## OPHIUCHUS (continued)

ngc6235  
GC MAG 10.0  
RA 16 53.4 DEC -22 11  
SA2000 22 URAN 337

from ngc6287 go .5° N and 2.7° W to ngc6235

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc6284  
GC MAG 9.0  
RA 17 04.5 DEC -24 46  
SA2000 22 URAN 337

from ngc6235 return .5° S and 2.7° E to ngc6287  
then  
from ngc6287 go .2° W and 2.1° S to ngc6284

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc6293  
GC MAG 8.5  
RA 17 10.2 DEC -26 35  
SA2000 22 URAN 337

from ngc6284 go 1.3° E and 1.8° S to ngc6293

date \_\_\_\_\_ site \_\_\_\_\_

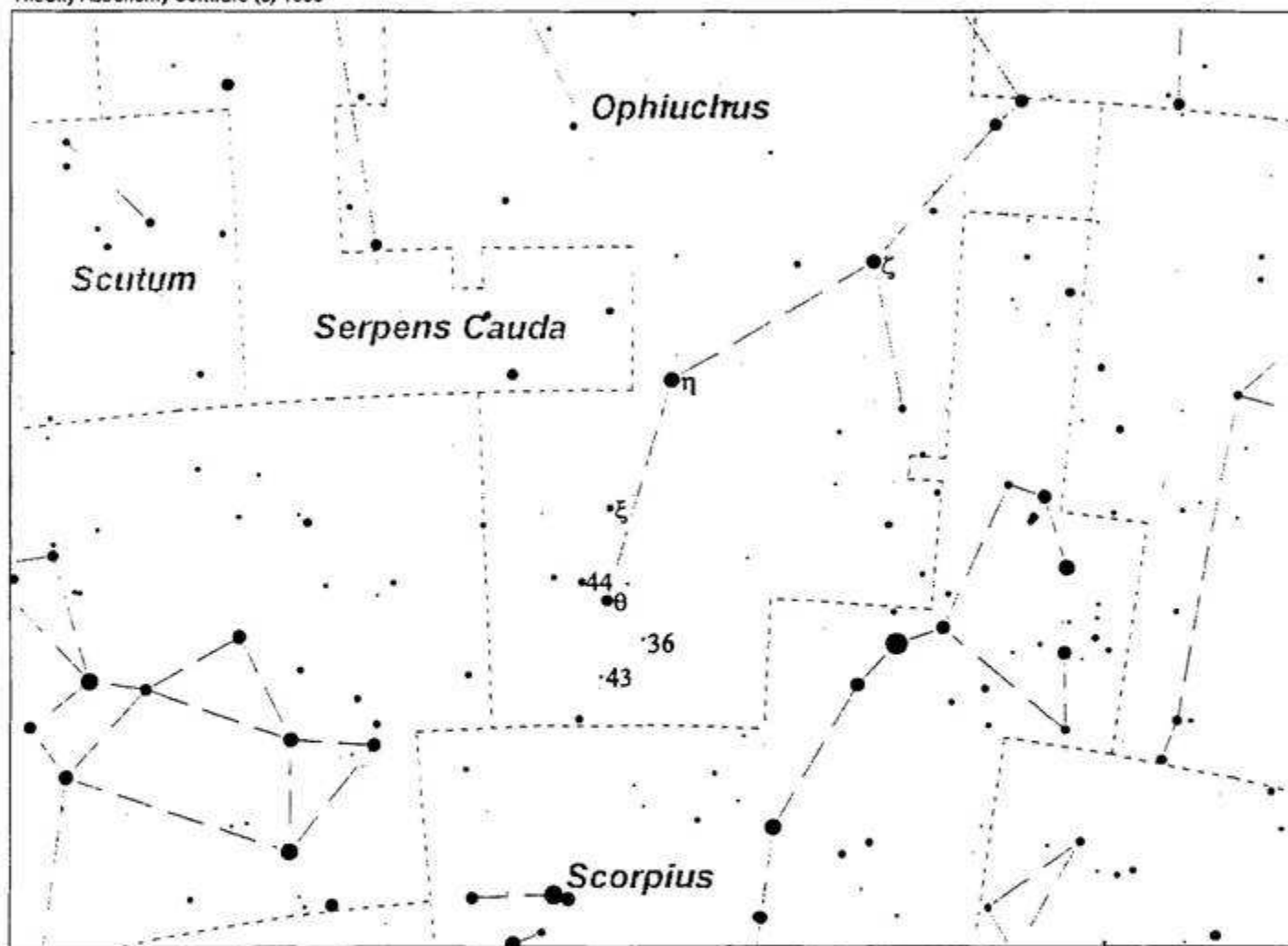
notes \_\_\_\_\_

ngc6304  
GC MAG 8.5  
RA 17-14.5 DEC -29 28  
SA2000 22 URAN 337/376

from ngc6293 go 1.3° E to star 36 OPH  
then  
from star 36 OPH go .2° W and 2.8° S to ngc6304

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



## OPHIUCHUS (continued)

ngc6316  
GC MAG 9.0  
RA 17 16.6 DEC -28 08  
SA2000 22 URAN 376

from ngc6304 go .5° E and 1.3° N to ngc6316

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc6355  
GC MAG 9.5  
RA 17 24.0 DEC -26 21  
SA2000 22 URAN 338

from ngc6316 go 1.5° E to star 43 OPH  
then  
from star 43 OPH go .2° E and 1.8° N to ngc6355

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc6369  
PN MAG 13.0  
RA 17 29.3 DEC -23 46  
SA2000 22 URAN 338

from ngc6355 go .5° W and 1.4° N to θ OPH  
then  
from θ OPH go .8° N and 1.0° E to star 44 OPH  
then  
from star 44 OPH go .4° N and .7° E to ngc6369

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

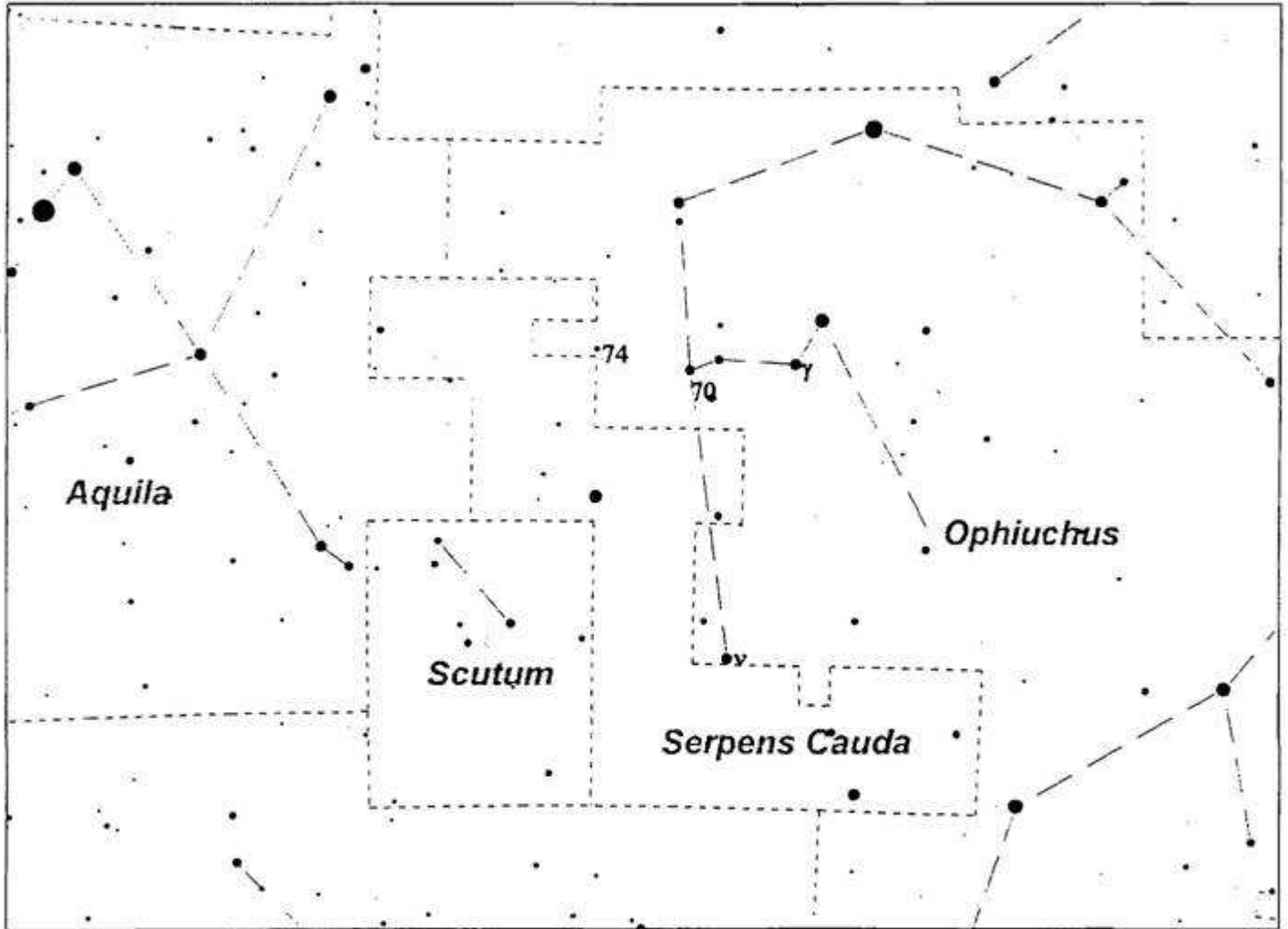
ngc6401  
GC MAG 9.5  
RA 17 38.6 DEC -23 55  
SA2000 22 URAN 338

from ngc6369 go .2° S and 2.1° E to ngc6401  
\*sug targets 6440 and 6445 Sgr\*

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*SUG SAGITTARIUS SEARCH SEQUENCE OR GO ON TO NGC6517\*



# OPHIUCHUS (continued)

ngc6517  
GC MAG 10.5  
RA 18 01.8 DEC -8 58  
SA2000 15 URAN 294

from  $\nu$  OPH go  $.7^\circ$  E and  $.8^\circ$  N to ngc6517

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc6426  
GC MAG 11.0  
RA 17 43.7 DEC 3 00  
SA2000 15 URAN 248

from  $\gamma$  OPH go  $.3^\circ$  N and  $.7^\circ$  W to nge6426

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc6633  
OC MAG 5.0  
RA 18 27.7 DEC 6 34  
SA2000 15 URAN 249/204

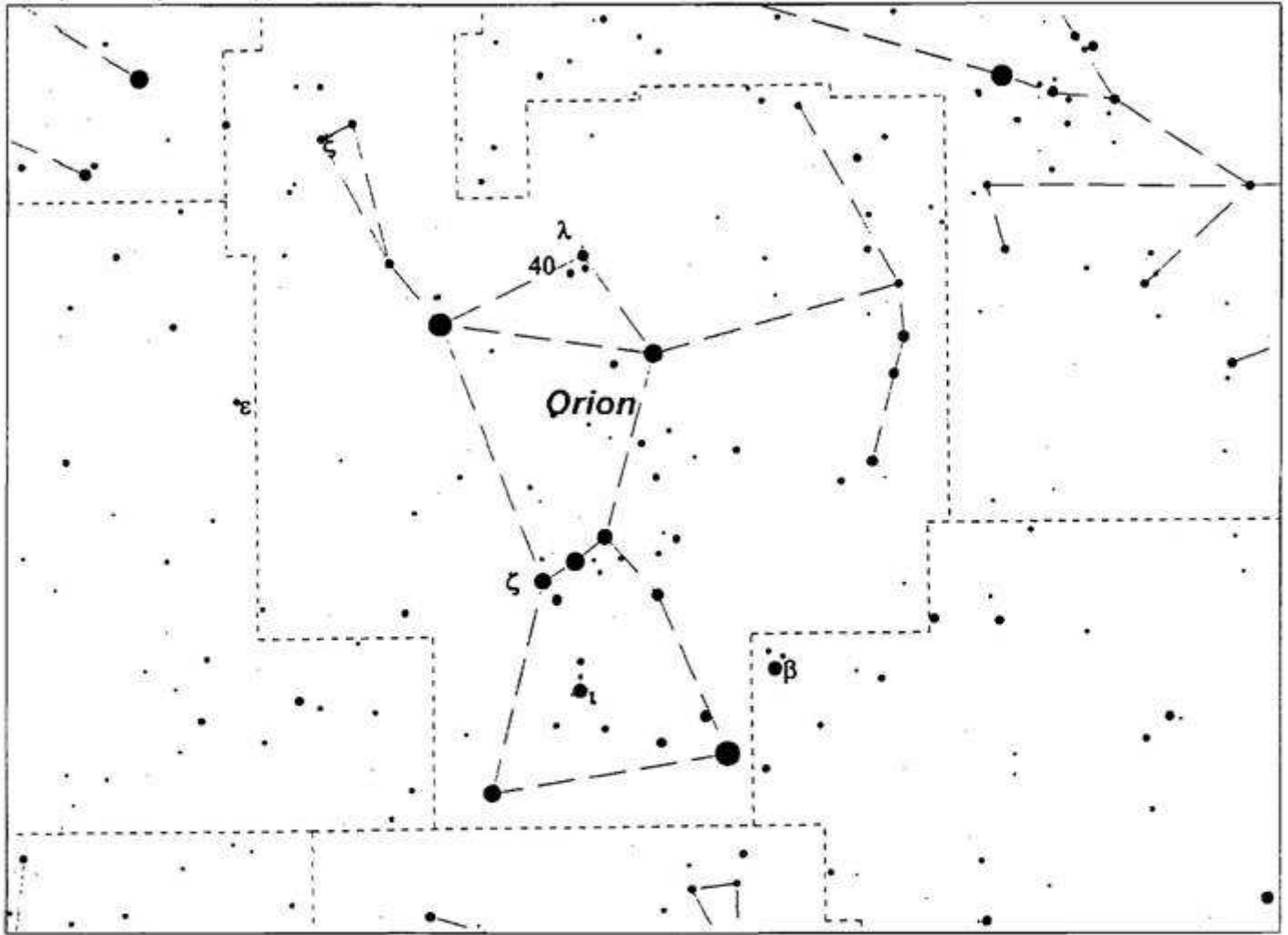
from star 70 OPH go  $.9^\circ$  N and  $3.8^\circ$  E to star 74 OPH  
then  
from star 74 OPH go  $1.7^\circ$  E and  $3.2^\circ$  N to ngc6633

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*SCUTUM SEARCH SEQUENCE BEGINS AT  $\alpha$  SCT\*

\*AQUILA SEARCH SEQUENCE BEGINS AT  $\theta$  SER\*



# ORION

ngc1788  
DN MAG N/A  
RA 5 06.9 DEC -3 20  
SA2000 11 URAN 225

from  $\beta$  ERI go .2° W and 1.7° N to ngc1788

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc1980  
C/N MAG 2.5  
RA 5 35.2 DEC -5 55  
SA2000 11 URAN 225

ngc1980 surrounds  $\iota$  ORI  
(nebulosity at southern-most tip of m42)

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc1999  
DN MAG N/A  
RA 5 36.5 DEC -6 43  
SA2000 11 URAN 270

from  $\iota$  ORI go .3° E and .8° S to ngc1999  
\*sug target 1964 Lep\*

date \_\_\_\_\_ site \_\_\_\_\_

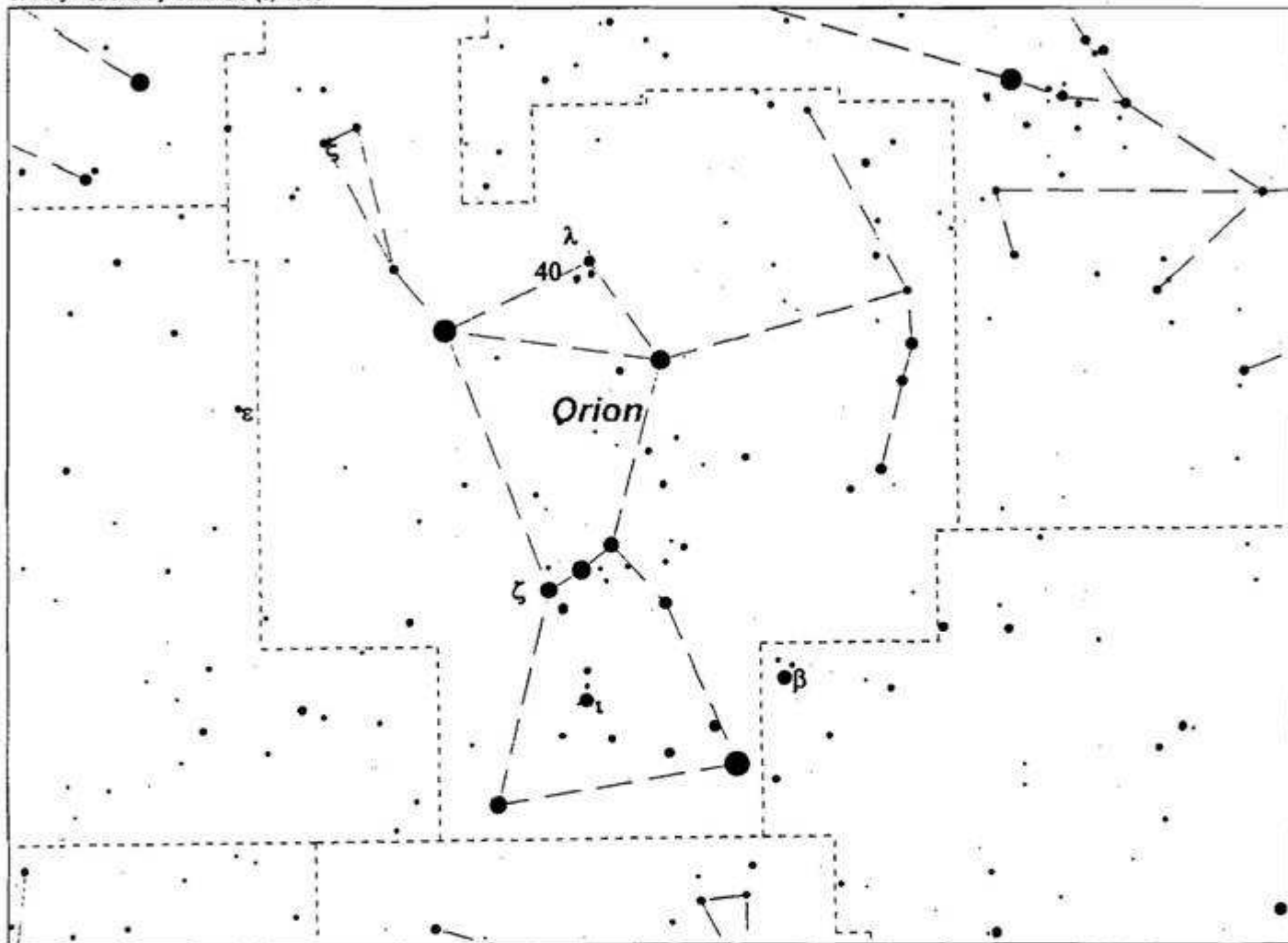
notes \_\_\_\_\_

ngc2024  
DN MAG N/A  
RA 5 42.0 DEC -1 50  
SA2000 11 URAN 226

from  $\zeta$  ORI go .1° N and .3° E to ngc2024

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_





## ORION (continued)

ngc2022  
PN MAG 12.0  
RA 5 42.1 DEC 9 05  
SA2000 11 URAN 181

from  $\lambda$  ORI go  $.4^\circ$  E and  $.6^\circ$  S to star 40 ORI  
then  
from star 40 ORI go  $.2^\circ$  S and  $1.3^\circ$  E to ngc2022

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc2186  
OC MAG 9.0  
RA 6 12.2 DEC 5 27  
SA2000 11 URAN 227

from  $\epsilon$  MON go  $.9^\circ$  N and  $2.8^\circ$  W to ngc2186

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc2169  
OC MAG 6.5  
RA 6 08.4 DEC 13 57  
SA2000 11 URAN 182

from  $\xi$  ORI go  $.3^\circ$  S and  $.8^\circ$  W to ngc2169

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

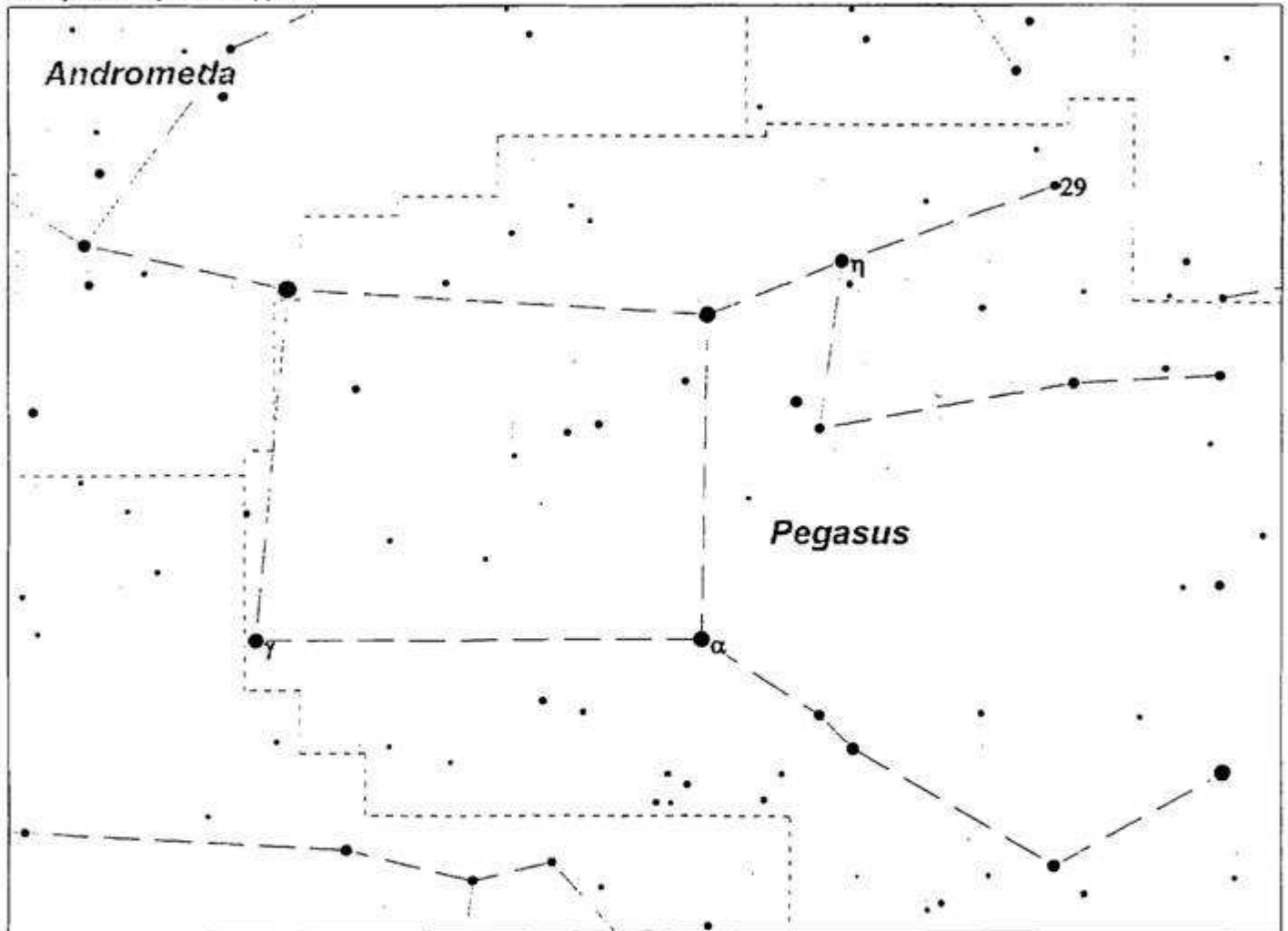
ngc2194  
OC MAG 9.0  
RA 6 13.8 DEC 12 48  
SA2000 11 URAN 182

from ngc2169 return  $.3^\circ$  N and  $.8^\circ$  E to  $\xi$  ORI  
then  
from  $\xi$  ORI go  $.5^\circ$  E and  $1.4^\circ$  S to ngc2194

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*CANIS MAJOR SEARCH SEQUENCE BEGINS AT  $\beta$  CMA\*  
\*MONOCEROS SEARCH SEQUENCE BEGINS AT  $\xi$  GEM\*



# PEGASUS

ngc7331  
GX MAG 9.5  
RA 22 37.0 DEC 34 26  
SA2000 9 URAN 123

from  $\eta$  PEG go  $1.3^\circ$  W and  $4.2^\circ$  N to ngc7331

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc7217  
GX MAG 10.0  
RA 22 07.8 DEC 31 21  
SA2000 9 URAN 122

from ngc7331 go  $1.2^\circ$  S and  $5.7^\circ$  W to star 29 PEG  
then  
from star 29 PEG go  $.4^\circ$  W and  $1.8^\circ$  S to ngc7217

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc7448  
GX MAG 12.0  
RA 23 00.0 DEC 15 59  
SA2000 17 URAN 213

from  $\alpha$  PEG go  $.8^\circ$  N and  $1.1^\circ$  W to ngc7448

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc7479  
GX MAG 11.0  
RA 23 05.0 DEC 12 19  
SA2000 17 URAN 213

from ngc7448 return  $.8^\circ$  S and  $1.1^\circ$  E to  $\alpha$  PEG  
then  
from  $\alpha$  PEG go  $2.9^\circ$  S to ngc7479

date \_\_\_\_\_ site \_\_\_\_\_

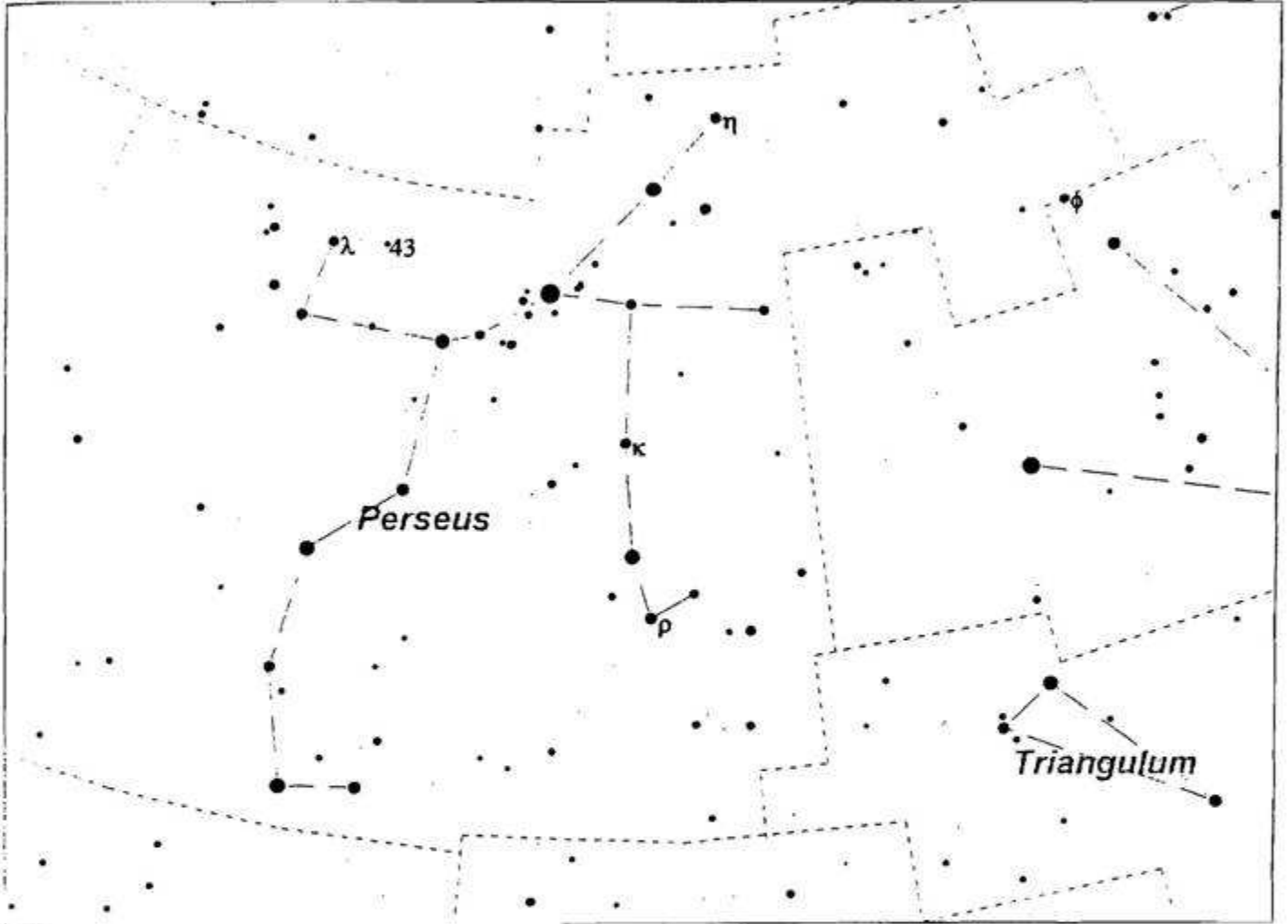
notes \_\_\_\_\_

ngc7814  
GX MAG 10.5  
RA 0 05.3 DEC 16 08  
SA2000 17 URAN 170

from  $\gamma$  PEG go  $1.0^\circ$  N and  $2.4^\circ$  W to ngc7814

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



# PERSEUS

ngc651 (m76)  
PN MAG 12.0  
RA 1 42.3 DEC 51 34  
SA2000 1 URAN 37

from  $\phi$  PER go .2° W and .9° N to ngc651

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc884  
OC MAG 4.0  
RA 2 22.4 DEC 57 07  
SA2000 1 URAN 38/37

from  $\eta$  PER go 1.2° N and 4.0° W to ngc884

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc869  
OC MAG 4.0  
RA 2 19.0 DEC 57 09  
SA2000 1 URAN 37

from ngc884 go .5° W to ngc869

date \_\_\_\_\_ site \_\_\_\_\_

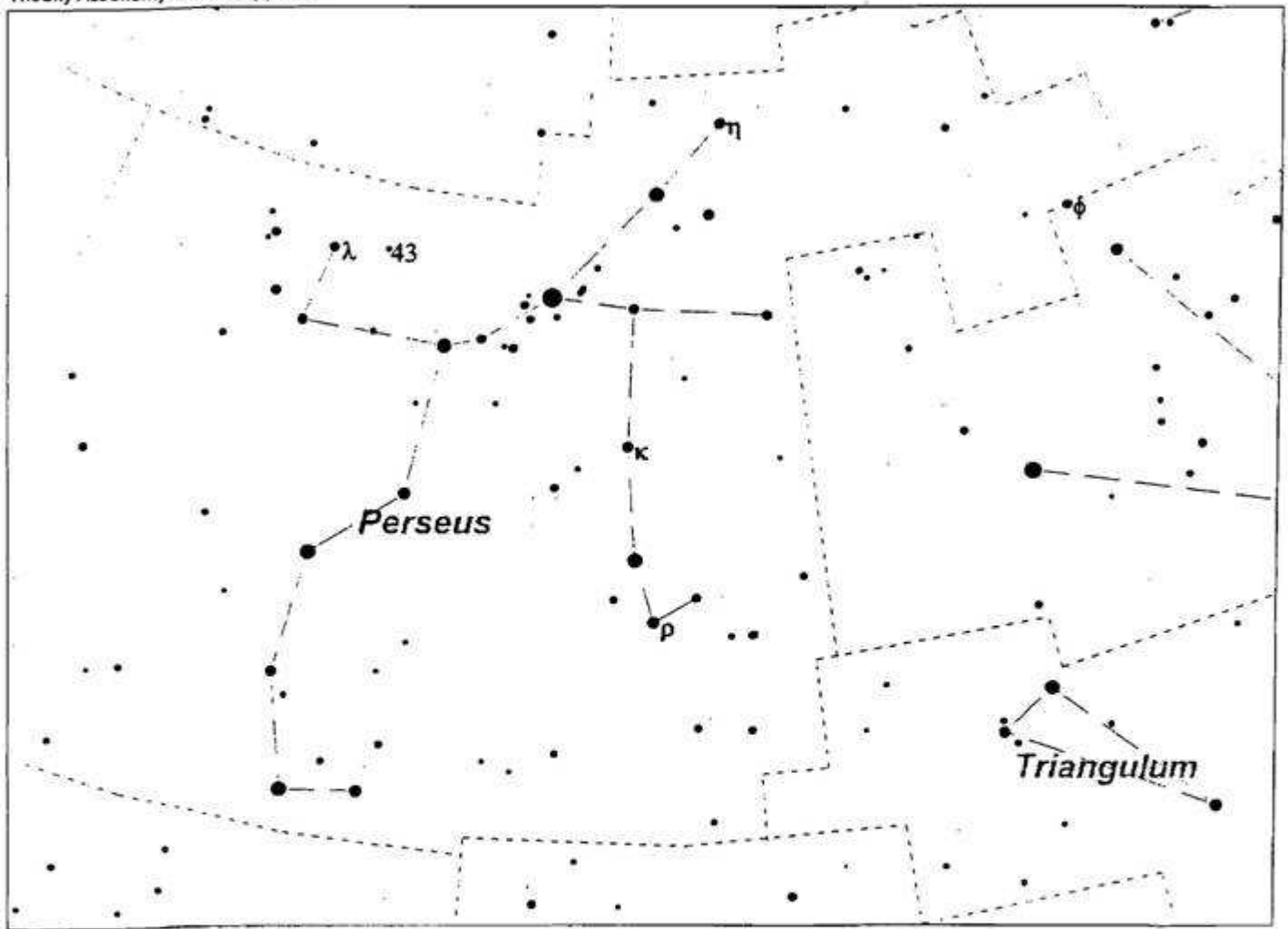
notes \_\_\_\_\_

ngc1245  
OC MAG 8.5  
RA 3 14.7 DEC 47 15  
SA2000 1 URAN 63

from  $\kappa$  PER go .9° E and 2.4° N to ngc1245

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



## PERSEUS (continued)

ngc1023  
GX MAG 9.5  
RA 2 40.5 DEC 39 03  
SA2000 4 URAN 63/62

from  $\rho$  PER go .2° N and 4.8° W to ngc1023

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc1342  
OC MAG 7.0  
RA 3 31.6 DEC 37 20  
SA2000 4 URAN 94

from  $\rho$  PER go 1.5° S and 5.2° E to ngc1342

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc1513  
OC MAG 8.5  
RA 4 10.0 DEC 49 31  
SA2000 4 URAN 39

from  $\lambda$  PER go .6° E and .8° S to ngc1513

date \_\_\_\_\_ site \_\_\_\_\_

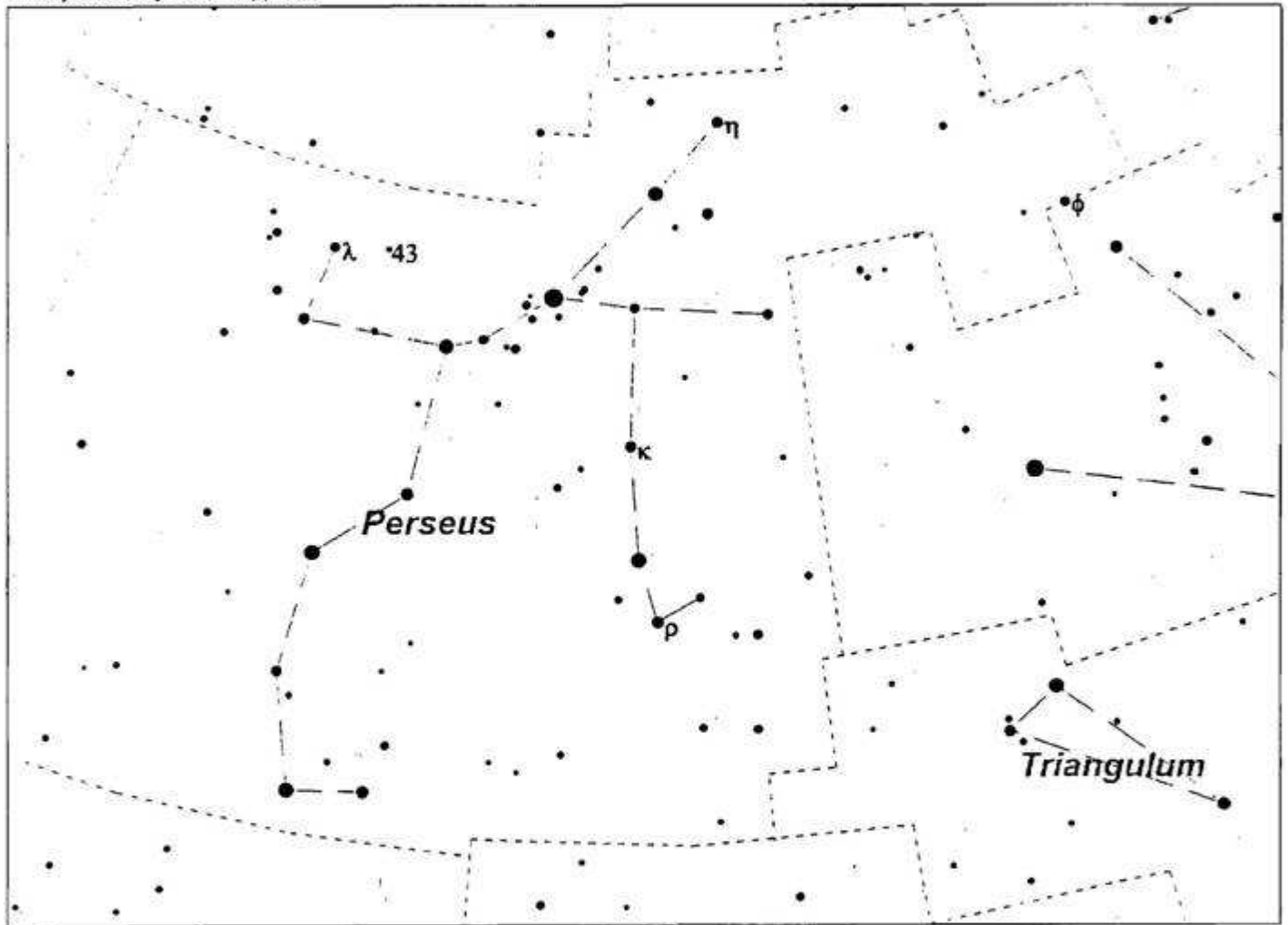
notes \_\_\_\_\_

ngc1545  
OC MAG 6.5  
RA 4 20.9 DEC 50 15  
SA2000 4 URAN 39

from ngc1513 go .7° N and 1.7° E to ngc1545

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_





## PERSEUS (continued)

ngc1528  
OC MAG 6.5  
RA 4 15.4 DEC 51 14  
SA2000 4 URAN 39

from ngc1545 go .9° W and 1.0° N to ngc1528

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc1444  
OC MAG 6.5  
RA 3 49.4 DEC 52 40  
SA2000 4 URAN 39

from ngc1528 go 1.4° N and 3.9° W to ngc1444

OR

from λ PER go .3° N and 1.6° W to star 43 PER

then

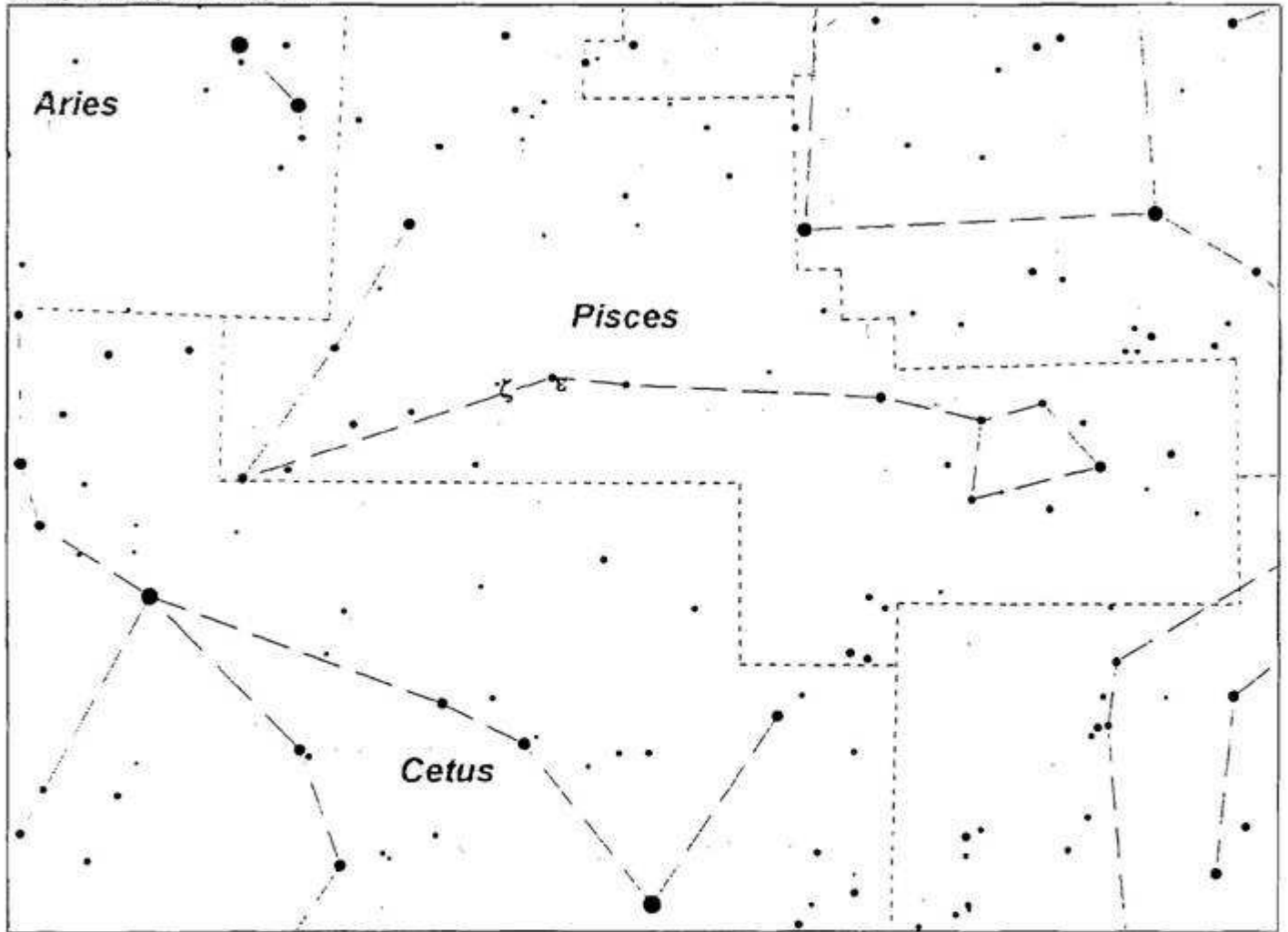
from star 43 PER go 1.2° W and 1.9° N to ngc1444

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*TAURUS SEARCH SEQUENCE BEGINS AT α TAU\*

\*AURIGA SEARCH SEQUENCE BEGINS AT ε AUR\*



# PISCES

**ngc488**

GX MAG 10.5

RA 1 21.8 DEC 5 16

SA2000 10 URAN 172

from  $\epsilon$  PSC go  $.3^\circ$  S and  $2.7^\circ$  E to  $\zeta$  PSC

then

from  $\zeta$  PSC go  $2.0^\circ$  E and  $2.3^\circ$  S to ngc488

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

**ngc524**

GX MAG 10.5

RA 1 24.8 DEC 9 33

SA2000 10 URAN 172/173

from ngc488 go  $.7^\circ$  E and  $4.2^\circ$  N to ngc524

OR

from  $\epsilon$  PSC go  $.3^\circ$  S and  $2.7^\circ$  E to  $\zeta$  PSC

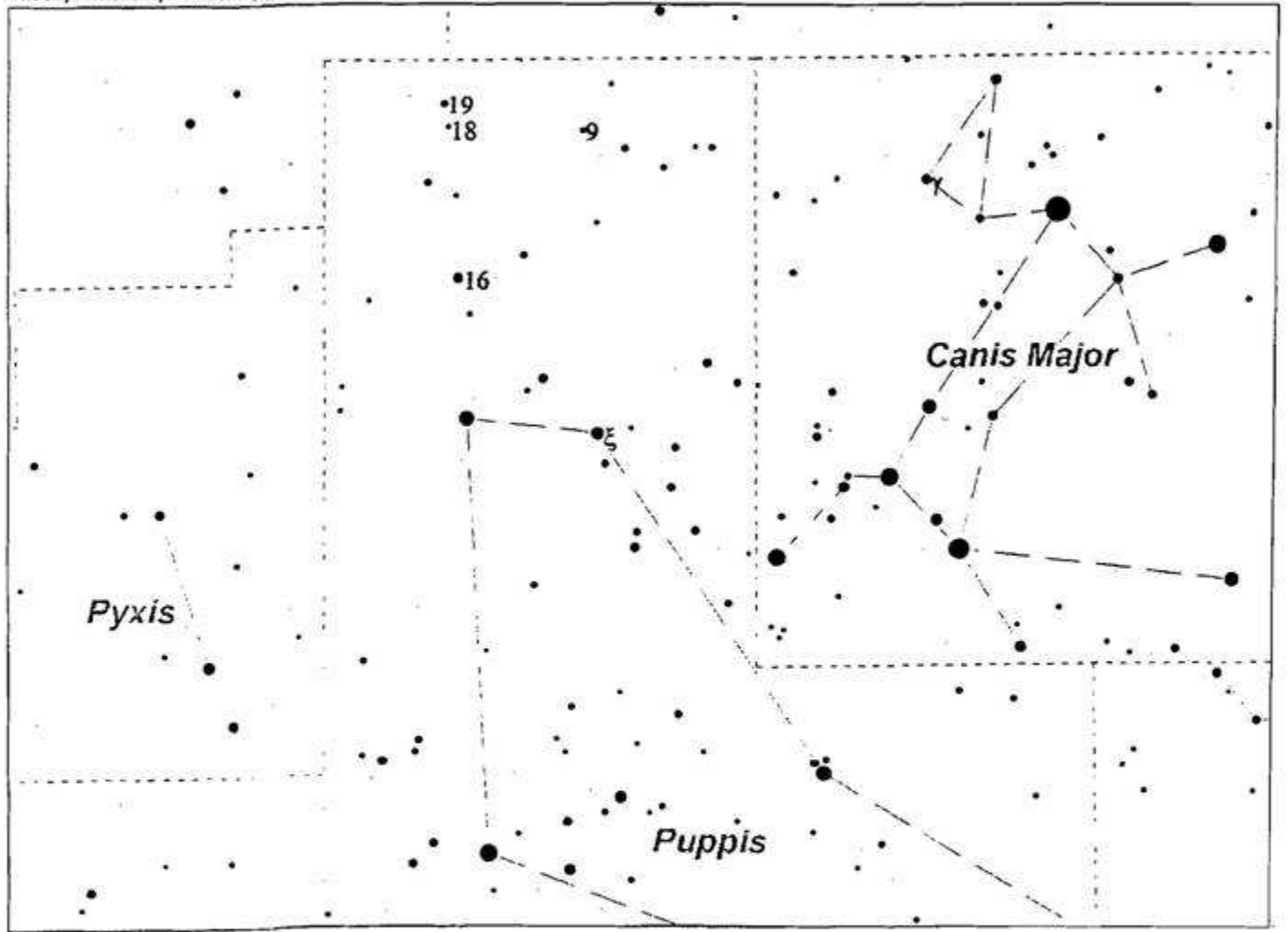
then

from  $\zeta$  PSC go  $1.9^\circ$  N and  $2.7^\circ$  E to ngc524

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*CETUS SEARCH SEQUENCE BEGINS AT  $\eta$  CET\*



# PUPPIS

\*SOUTHERN DECLINATION ADVISORY\*

ngc2422 (m47)  
OC MAG 4.5  
RA 7 36.6 DEC -14 30  
SA2000 12 URAN 273/274

from  $\gamma$  CMA go  $3.4^\circ$  E to \*sug target\* ngc2360  
then  
from ngc2360 go  $1.1^\circ$  N and  $4.5^\circ$  E to ngc2422

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc2423  
OC MAG 7.0  
RA 7 37.1 DEC -13 52  
SA2000 12 URAN 274

from ngc2422 go  $.1^\circ$  E and  $.6^\circ$  N to ngc2423

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc2438  
PN MAG 10.0  
RA 7 41.8 DEC -14 44  
SA2000 12 URAN 274

from ngc2423 go  $.9^\circ$  S and  $1.2^\circ$  E to ngc2438  
(near northern edge of m46)

date \_\_\_\_\_ site \_\_\_\_\_

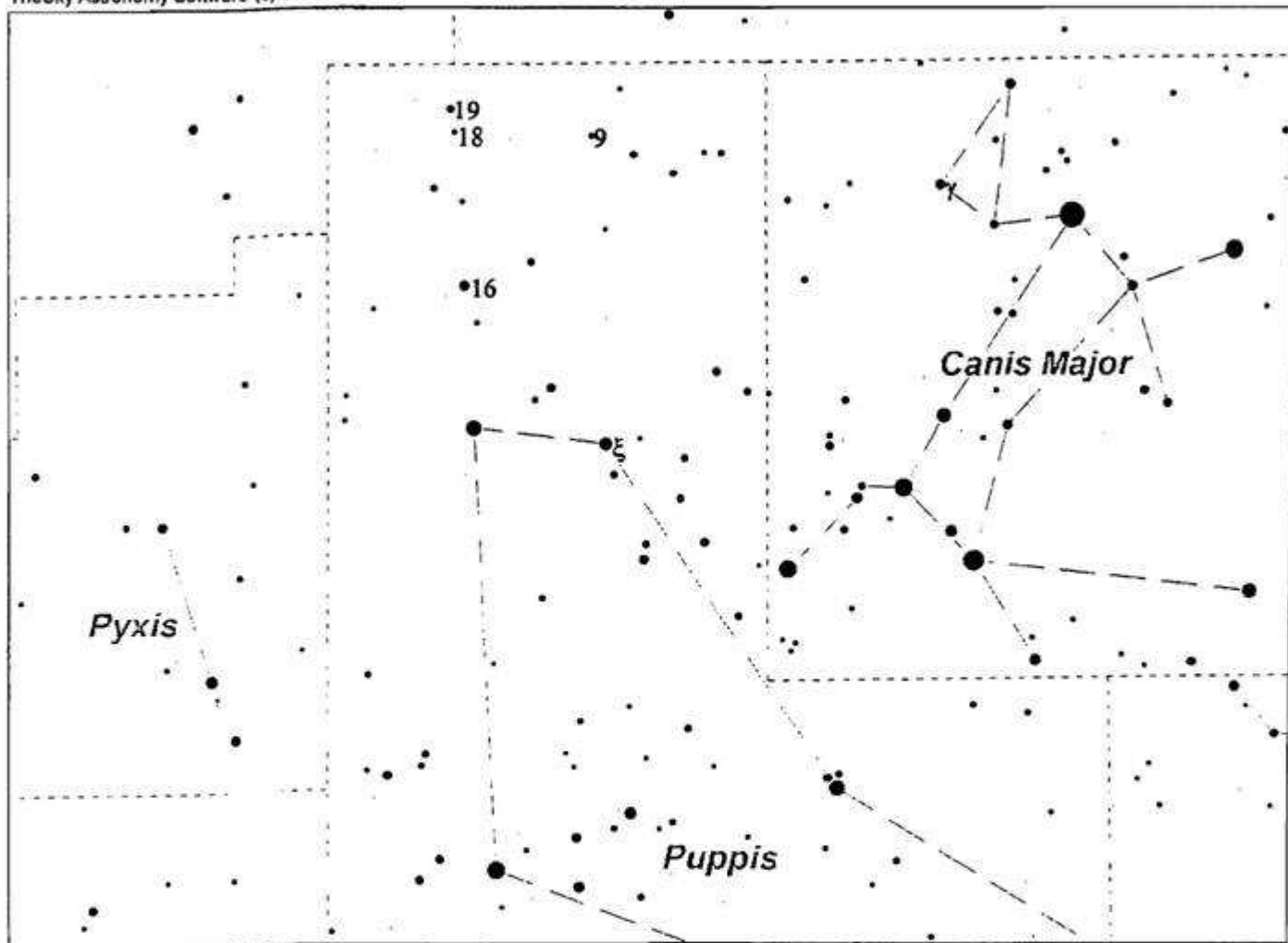
notes \_\_\_\_\_

ngc2539  
OC MAG 7.0  
RA 8 10.7 DEC -12 50  
SA2000 12 URAN 275

from ngc2438 go  $.8^\circ$  N and  $2.4^\circ$  E to star 9 PUP  
then  
from star 9 PUP go  $1.1^\circ$  N and  $4.6^\circ$  E to ngc2539  
OR  
from star 19 PUP go  $.1^\circ$  N and  $.1^\circ$  W to ngc2539

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



## PUPPIS (continued)

ngc2509  
OC MAG 9.0  
RA 8 00.7 DEC -19 04  
SA2000 12 URAN 275/320

from ngc2539 go 1.0° S to star 18 PUP  
then  
from star 18 PUP go .4° W and 5.5° S to star 16 PUP  
then  
from star 16 PUP go .2° N and 2.0° W to ngc2509

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc2479  
OC MAG 9.5  
RA 7 55.1 DEC -17 43  
SA2000 19 URAN 320

from ngc2509 go 1.4° W and 1.4° N to ngc2479

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc2440  
PN MAG 11.0  
RA 7 41.9 DEC -18 13  
SA2000 19 URAN 320

from ngc2479 go .5° S and 3.2° W to ngc2440

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc2421  
OC MAG 8.5  
RA 7 36.3 DEC -20 37  
SA2000 19 URAN 319

from ngc2440 go 1.3° W and 2.4° S to ngc2421

date \_\_\_\_\_ site \_\_\_\_\_

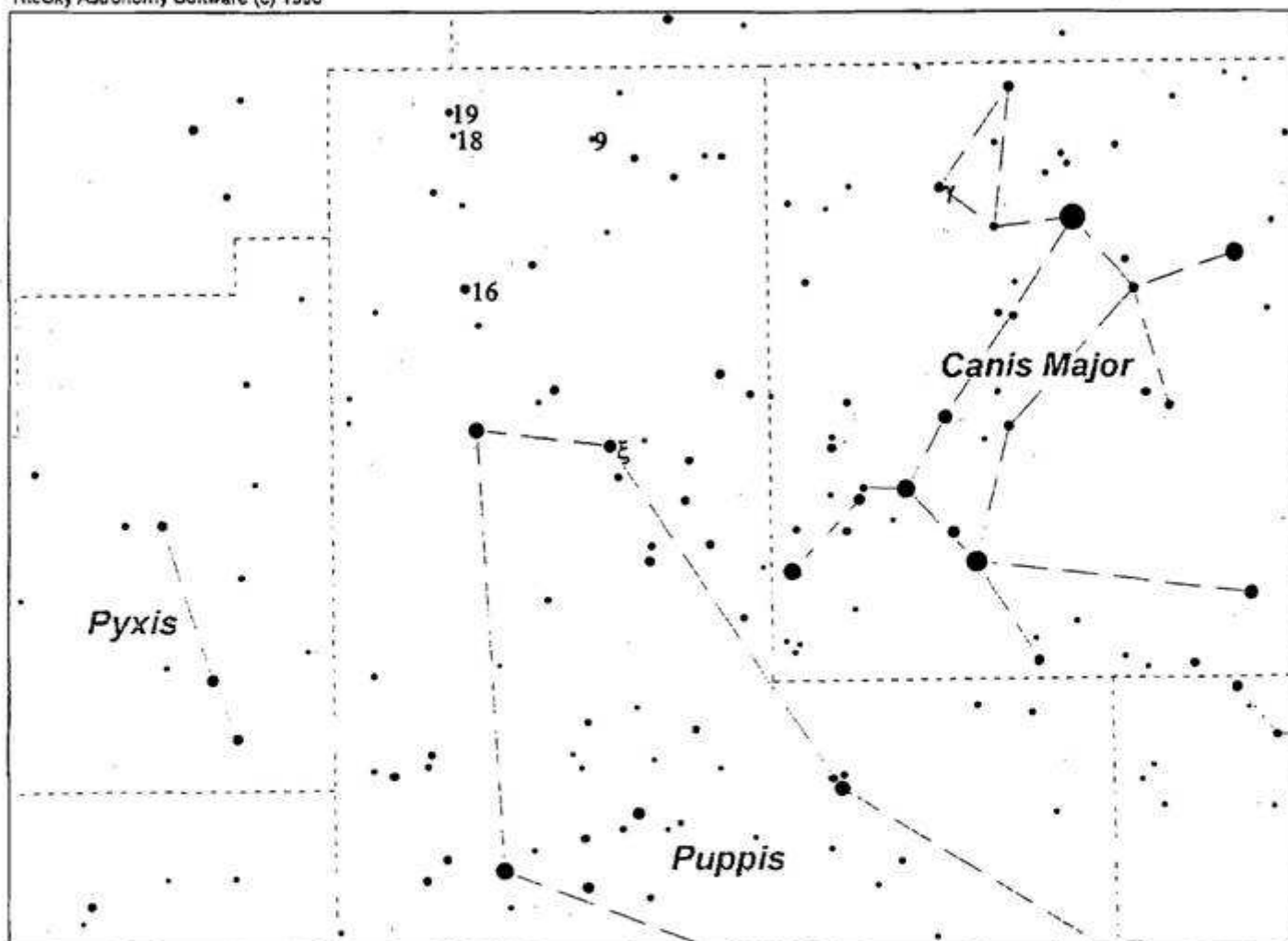
notes \_\_\_\_\_

ngc2482  
OC MAG 7.5  
RA 7 54.9 DEC -24 18  
SA2000 19 URAN 320

from  $\xi$  PUP go .6° N and 1.3° E to ngc2482

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_





## PUPPIS (continued)

ngc2489  
OC MAG 8.0  
RA 7 56.2 DEC -30 04  
SA2000 19 URAN 320/362

from ngc2482 go .2° E and 3.7° S to ngc2483  
then  
from ngc2483 go .1° E and 2.1° S to ngc2489

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc2527  
OC MAG 7.0  
RA 8 05.3 DEC -28 10  
SA2000 19 URAN 362

from ngc2489 go 2.0° E and 1.9° N to ngc2527

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc2571  
OC MAG 7.0  
RA 8 18.9 DEC -29 44  
SA2000 19 URAN 362

from ngc2527 go 3.0° E and 1.6° S to ngc2571

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

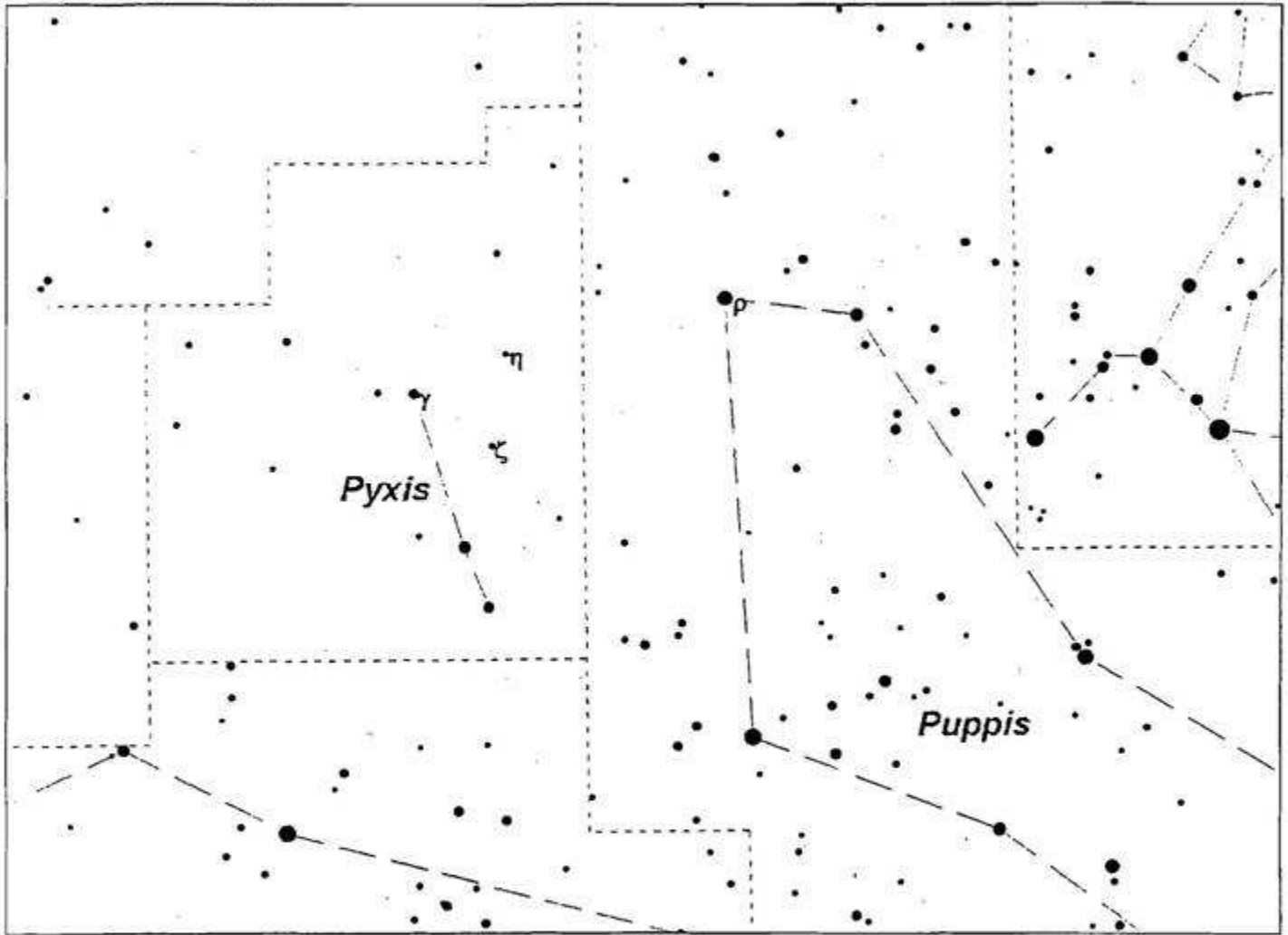
ngc2567  
OC MAG 7.5  
RA 8 18.3 DEC -30 38  
SA2000 19 URAN 362

from ngc2571 go .1° W and .9° S to ngc2567

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*PYXIS SEARCH SEQUENCE BEGINS AT  $\rho$  PUP\*



# PYXIS

\*SOUTHERN DECLINATION ADVISORY\*

ngc2613  
GX MAG 10.5  
RA 8 33.3 DEC -22 58  
SA2000 20 URAN 321

from  $\rho$  PUP go 1.3° N and 5.9° E to ngc2613  
OR  
from  $\gamma$  PYX go 1.4° N and 2.8° W to  $\eta$  PYX  
then  
from  $\eta$  PYX go 1.0° W and 3.3° N to ngc2613

date \_\_\_\_\_ site \_\_\_\_\_

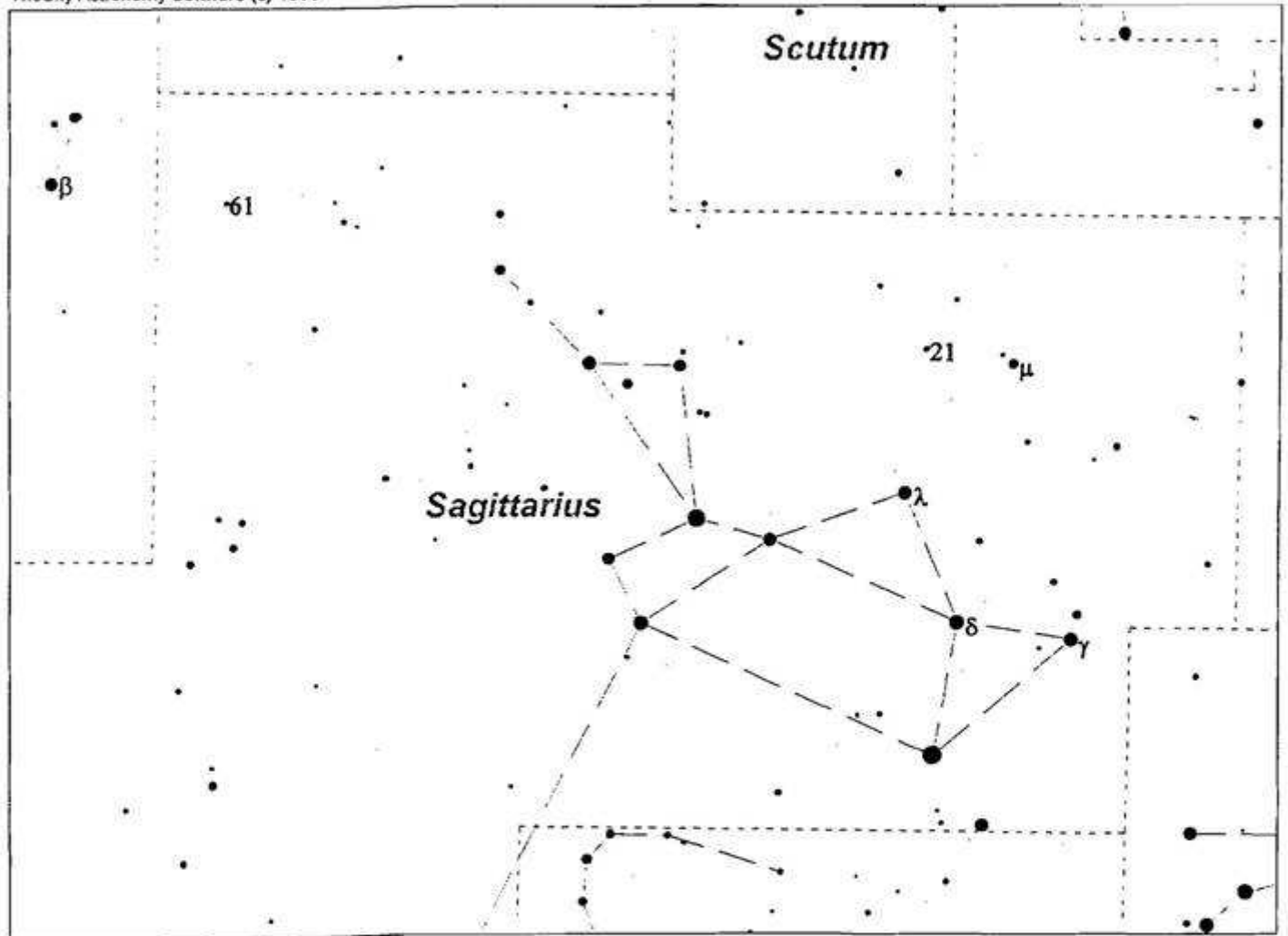
notes \_\_\_\_\_

ngc2627  
OC MAG 8.0  
RA 8 37.3 DEC -29 57  
SA2000 20 URAN 321/363

from ngc2613 go 1.0° E and 3.3° S to  $\eta$  PYX  
then  
from  $\eta$  PYX go .1° W and 3.7° S to ngc2627  
OR  
from  $\gamma$  PYX go 2.4° W and 1.8° S to  $\zeta$  PYX  
then  
from  $\zeta$  PYX go .4° S and .5° W to ngc2627

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



# SAGITTARIUS

\*SOUTHERN DECLINATION ADVISORY\*

ngc6624  
GC MAG 8.5  
RA 18 23.7 DEC -30 22  
SA2000 22 URAN 377

from  $\delta$  SGR go  $.5^\circ$  S and  $.6^\circ$  E to ngc6624

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc6569  
GC MAG 9.0  
RA 18 13.6 DEC -31 50  
SA2000 22 URAN 377

from ngc6624 go  $1.5^\circ$  S and  $2.2^\circ$  W to ngc6569

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc6528  
GC MAG 9.5  
RA 18 04.8 DEC -30 03  
SA2000 22 URAN 377

from  $\gamma$  SGR go  $.2^\circ$  E and  $.4^\circ$  N to ngc6528

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc6522  
GC MAG 9.0  
RA 18 03.6 DEC -30 02  
SA2000 22 URAN 377

from ngc6528 go  $.3^\circ$  W to ngc6522

date \_\_\_\_\_ site \_\_\_\_\_

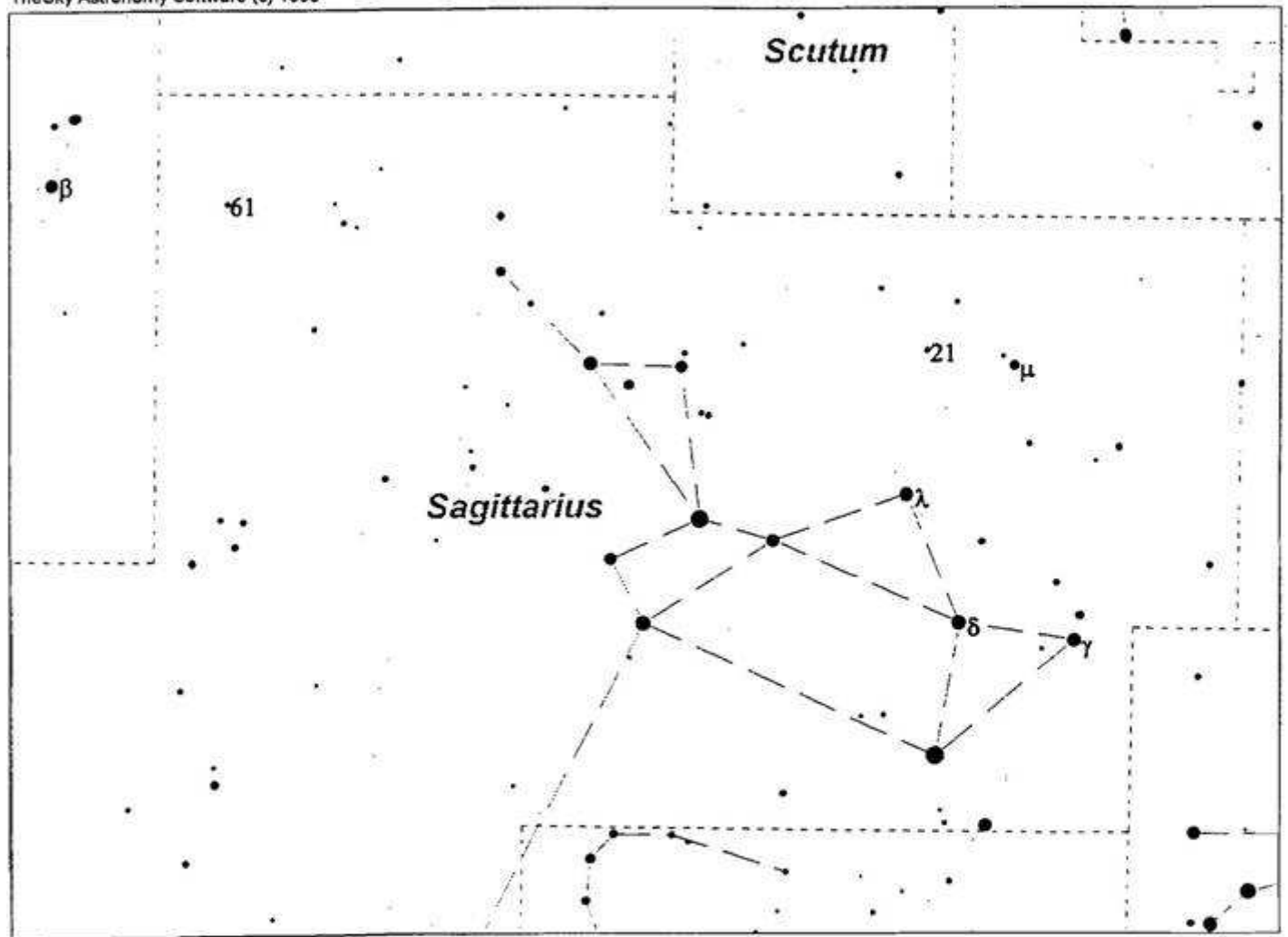
notes \_\_\_\_\_

ngc6520  
OC MAG 7.5  
RA 18 03.4 DEC -27 54  
SA2000 22 URAN 377

from ngc6522 go  $.1^\circ$  W and  $2.1^\circ$  N to ngc6520

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



## SAGITTARIUS (continued)

ngc6540  
OC MAG 14.0  
RA 18 06.3 DEC -27 49  
SA2000 22 URAN 339

from ngc6520 go .1° N and .6° E to ngc6540

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc6553  
GC MAG 8.5  
RA 18 09.3 DEC -25 54  
SA2000 22 URAN 339

from ngc6540 go .7° E and 1.9° N to ngc6553

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc6544  
GC MAG 8.5  
RA 18 07.3 DEC -25 00  
SA2000 22 URAN 339

from ngc6553 go .4° W and .9° N to ngc6544

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc6638  
GC MAG 9.0  
RA 18 30.9 DEC -25 30  
SA2000 22 URAN 340

from λ SGR go .1° S and .6° E to ngc6638

date \_\_\_\_\_ site \_\_\_\_\_

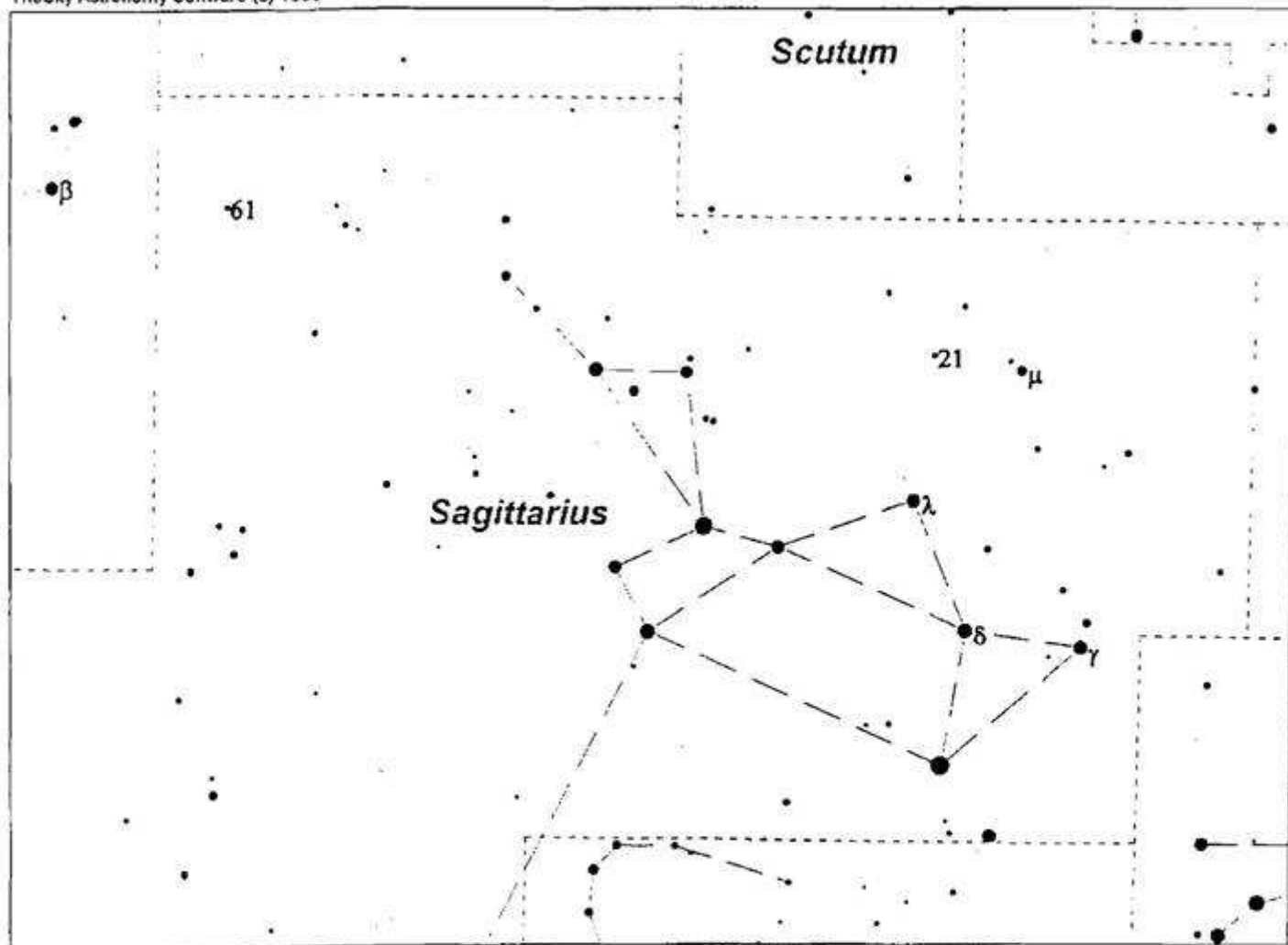
notes \_\_\_\_\_

ngc6642  
GC MAG 9.0  
RA 18 31.9 DEC -23 29  
SA2000 22 URAN 340

from ngc6638 go .2° E and 2.0° N to ngc6642

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_





# SAGITTARIUS (continued)

ngc6629  
PN MAG 12.0  
RA 18 25.7 DEC -23 12  
SA2000 22 URAN 340

from ngc6642 go .3° N and 1.4° W to ngc6629

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc6583  
OC MAG 10.5  
RA 18 15.8 DEC -22 08  
SA2000 22 URAN 339

from ngc6629 go 1.1° N and 2.3° W to ngc6583

OR

from  $\mu$  SGR go .5° E and 1.1° S to ngc6583

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc6568  
OC MAG 8.5  
RA 18 12.8 DEC -21 36  
SA2000 22 URAN 339

from ngc6583 go .5° N and .7° W to ngc6568

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc6514 (m20)  
C/N MAG 5.5  
RA 18 02.3 DEC -23 02  
SA2000 22 URAN 339

from ngc6568 go 1.5° S and 2.4° W to ngc6514

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc6440  
GC MAG 10.5  
RA 17 48.9 DEC -20 22  
SA2000 22 URAN 339

from ngc6514 go 1.3° W and 4.0° N to m23

then

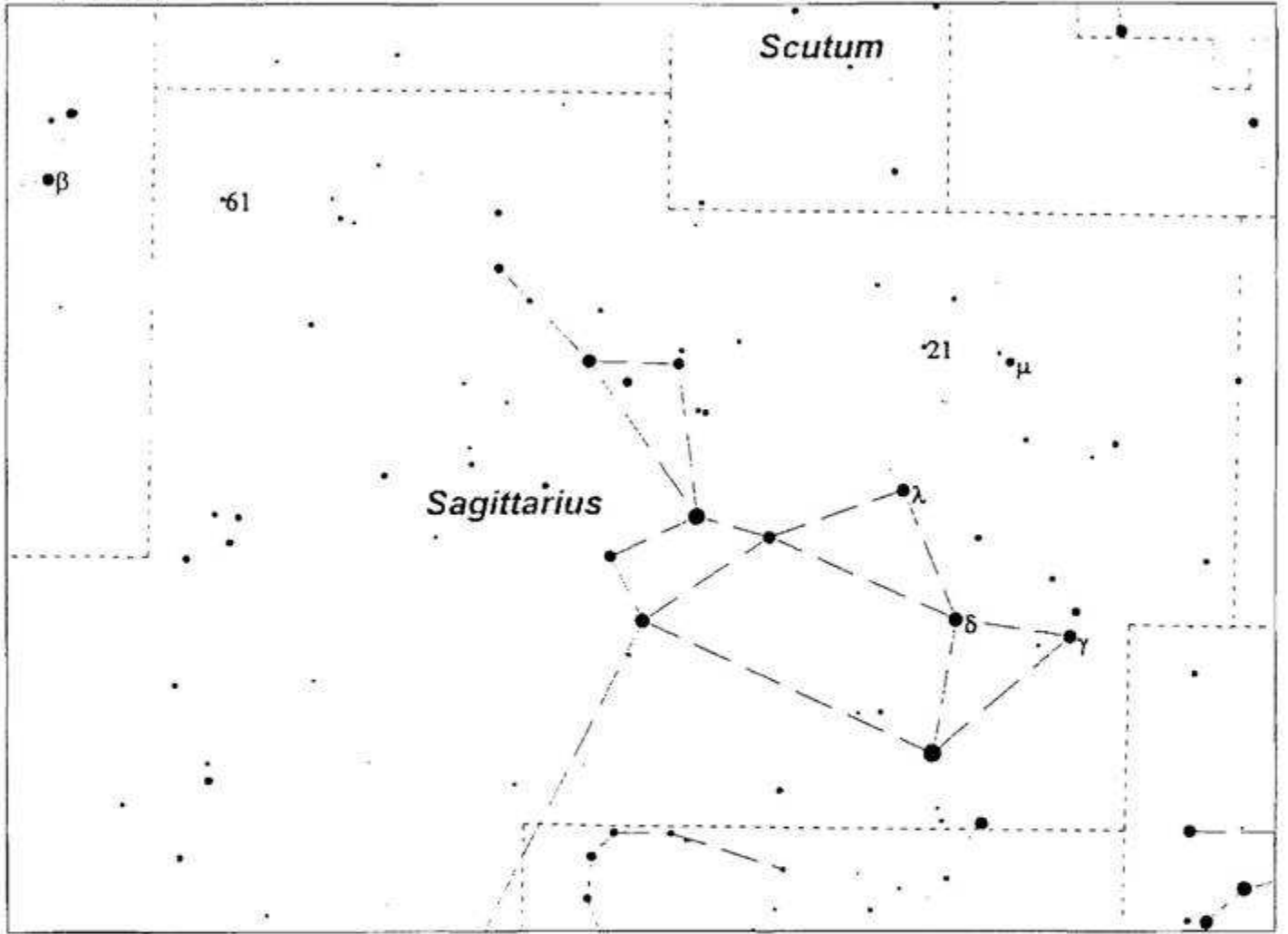
from m23 go 1.3° S and 1.8° W to ngc6440

OR

from  $\xi$  OPH go 2.7° E and 5.0° S to ngc6440

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



## SAGITTARIUS (continued)

ngc6445  
PN MAG 13.0  
RA 17 49.2 DEC -20 01  
SA2000 22 URAN 339

from ngc6440 go  $.1^{\circ}$  E and  $.4^{\circ}$  N to ngc6445

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc6645  
OC MAG 8.5  
RA 18 32.6 DEC -16 54  
SA2000 22 URAN 339/340

from ngc6445 go  $1.0^{\circ}$  N and  $1.8^{\circ}$  E to m23

then

from m23 go  $.2^{\circ}$  S and  $8.2^{\circ}$  E (thru m24) to m25

then

from m25 go  $.2^{\circ}$  E and  $2.3^{\circ}$  N to ngc6645

OR

from  $\lambda$  SGR go  $.6^{\circ}$  W and  $4.9^{\circ}$  N to star 21 SGR

then

from star 21 SGR go  $1.5^{\circ}$  E and  $1.3^{\circ}$  N to m25

then

from m25 go  $.2^{\circ}$  E and  $2.3^{\circ}$  N to ngc6645

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*SUG SCUTUM SEARCH SEQUENCE OR GO ON TO NGC6818\*

ngc6818  
PN MAG 10.0  
RA 19 44.0 DEC -14 09  
SA2000 16 URAN 298/297

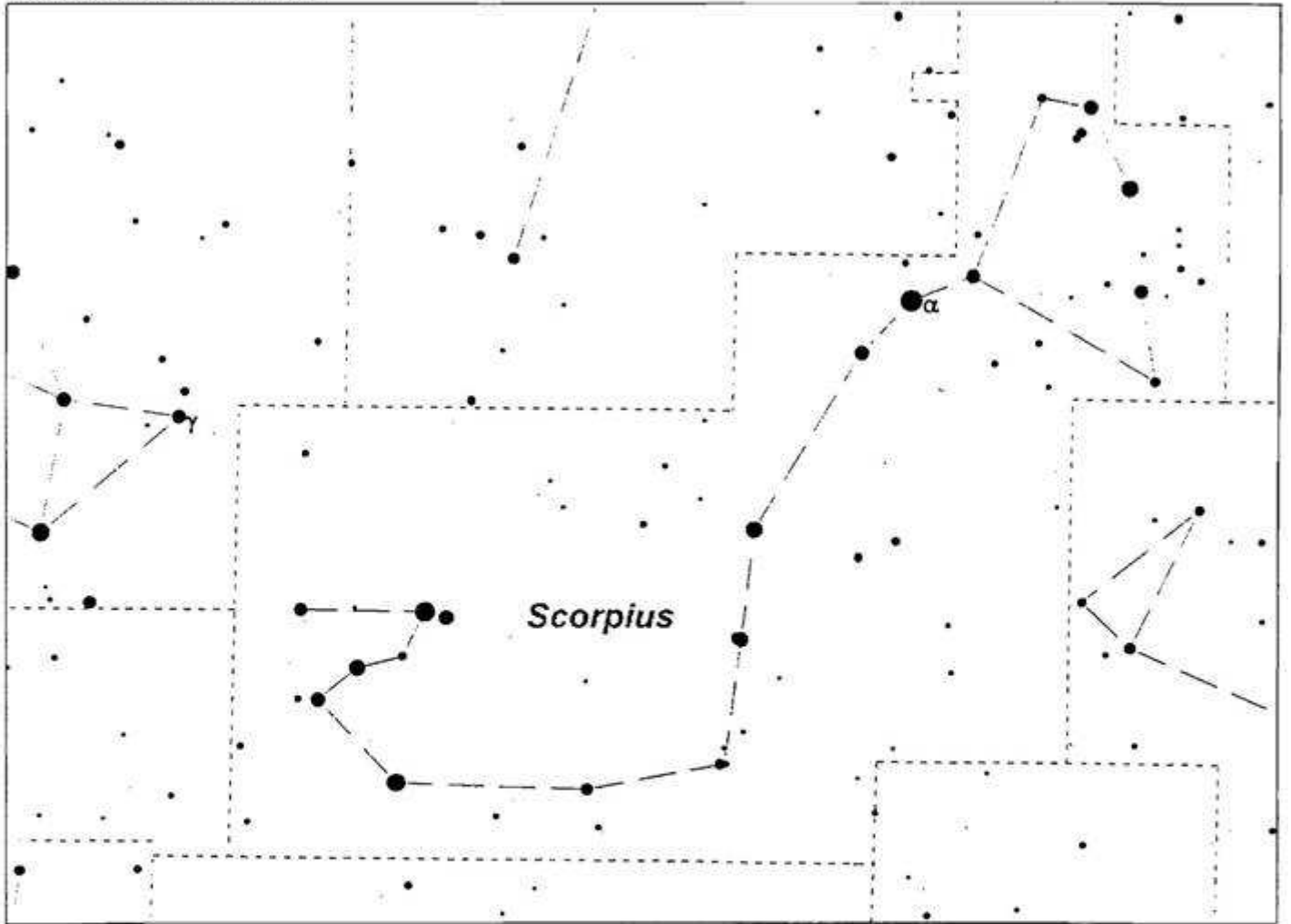
from  $\beta$  CAP go  $.7^{\circ}$  S and  $5.6^{\circ}$  W to star 61 SGR

then

from star 61 SGR go  $1.3^{\circ}$  N and  $3.4^{\circ}$  W to ngc6818

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



# SCORPIUS

**\*SOUTHERN DECLINATION ADVISORY\***

ngc6144  
GC MAG 9.0  
RA 16 27.3 DEC -26 02  
SA2000 22 URAN 336

from  $\alpha$  SCO go .4° N and .5° W to ngc6144

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

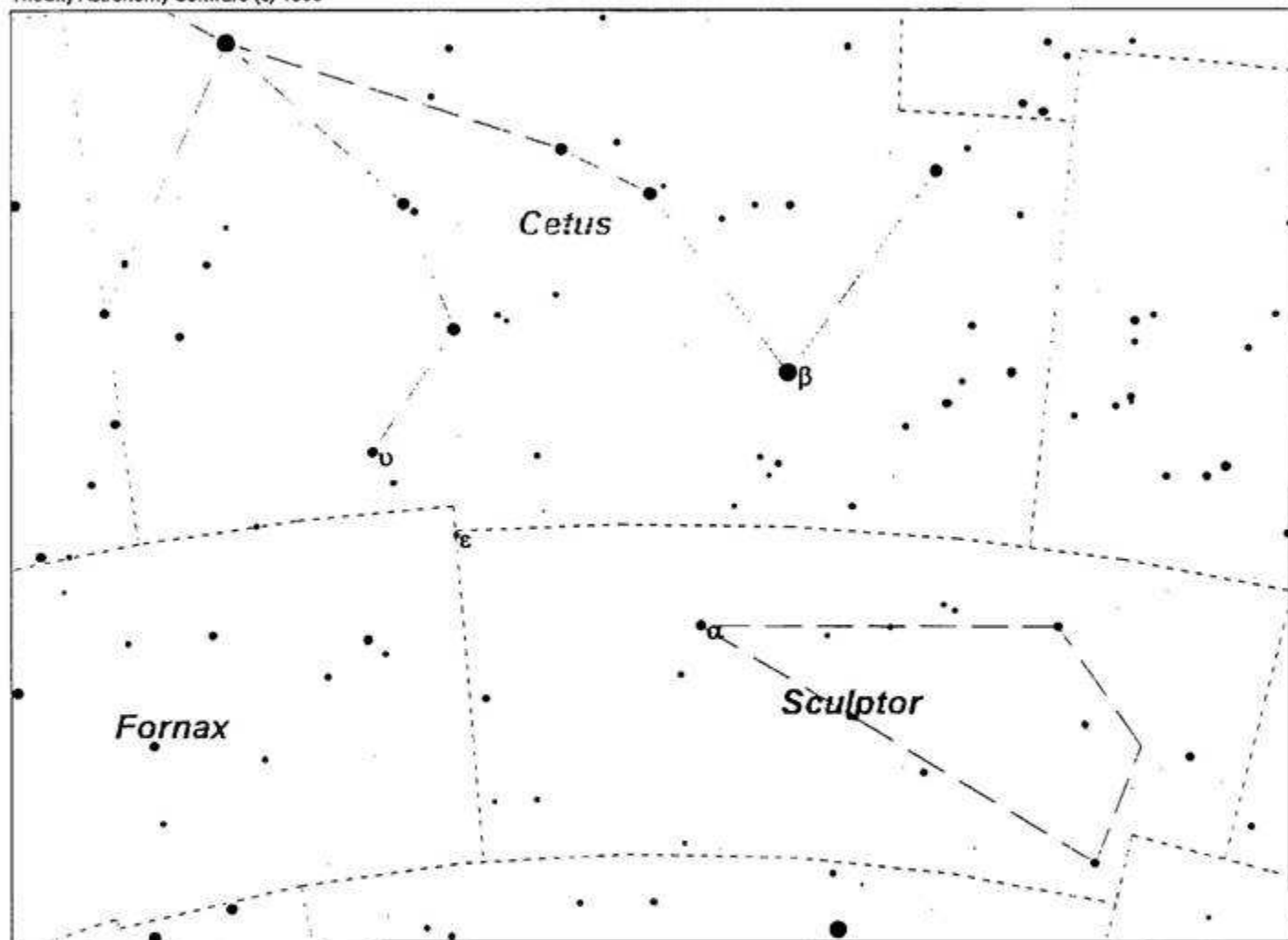
ngc6451  
OC MAG 8.5  
RA 17 50.7 DEC -30 13  
SA2000 22 URAN 377

from  $\gamma$  SGR go .2° N and 3.3° W to ngc6451

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

**\*SAGITTARIUS SEARCH SEQUENCE BEGINS AT  $\delta$  SGR\***  
**\*OPHIUCHUS SEARCH SEQUENCE BEGINS AT  $\zeta$  OPH\***



# SCULPTOR

\*SOUTHERN DECLINATION ADVISORY\*

ngc253  
GX MAG 7.5  
RA 0 47.5 DEC -25 18  
SA2000 18 URAN 307

from  $\beta$  CET go  $.8^\circ$  E and  $2.8^\circ$  S to \*sug target ngc247\*  
then  
from ngc247 go  $.1^\circ$  E and  $4.5^\circ$  S to ngc253

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc288  
GC MAG 8.5  
RA 0 52.8 DEC -26 35  
SA2000 18 URAN 307

from ngc253 go  $1.2^\circ$  E and  $1.3^\circ$  S to ngc288

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc613  
GX MAG 10.0  
RA 1 34.3 DEC -29 24  
SA2000 18 URAN 307/352

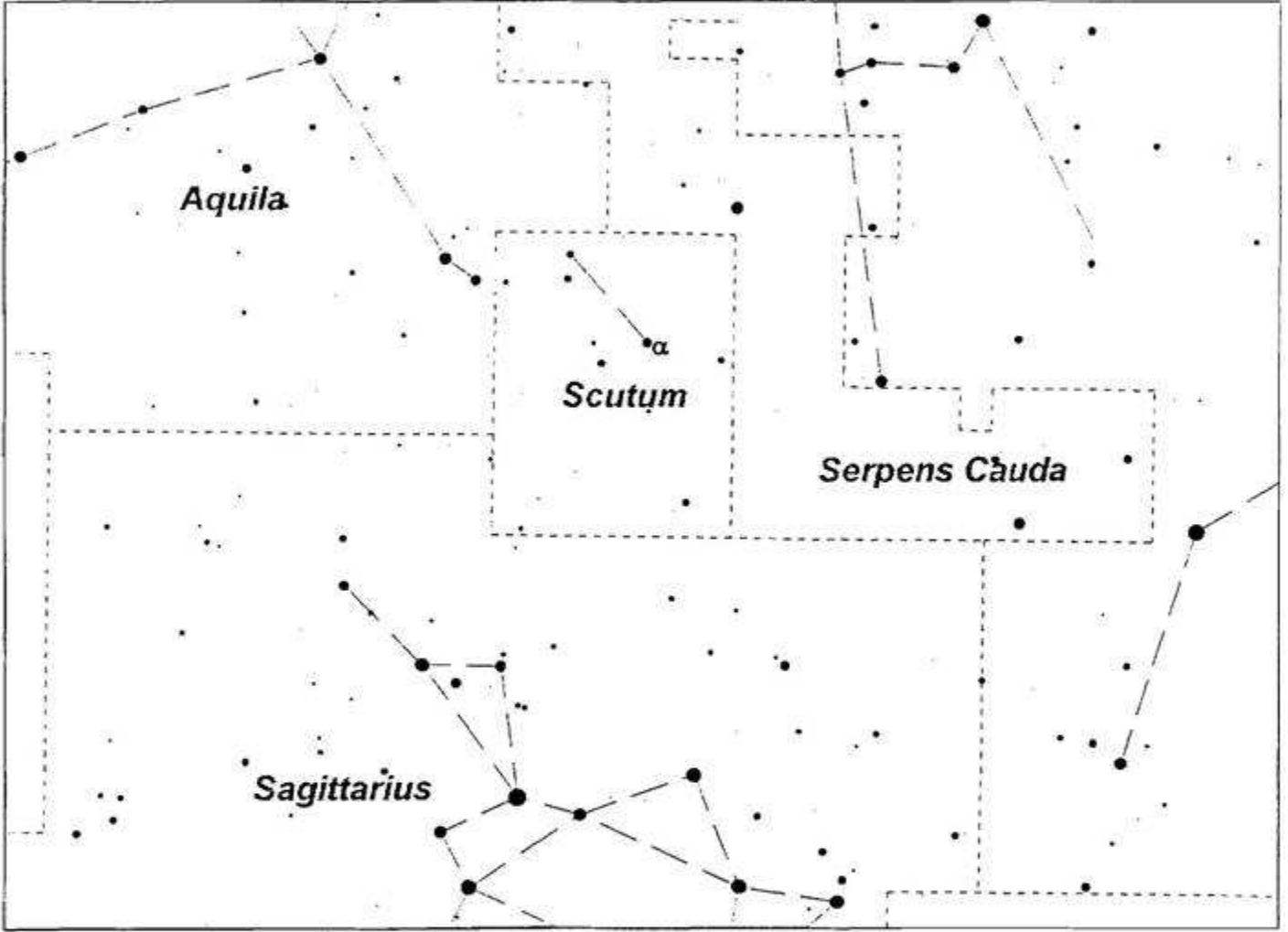
from ngc288 go  $1.3^\circ$  E and  $2.8^\circ$  S to  $\alpha$  SCL  
then  
from  $\alpha$  SCL go  $.1^\circ$  S and  $7.8^\circ$  E to ngc613  
OR

from  $\upsilon$  CET go  $3.6^\circ$  W and  $4.0^\circ$  S to  $\epsilon$  SCL  
then  
from  $\epsilon$  SCL go  $2.6^\circ$  W and  $4.3^\circ$  S to ngc613

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*ERIDANIS SEARCH SEQUENCE BEGINS AT  $\eta$  ERI\*





# SCUTUM

ngc6664  
OC MAG 8.0  
RA 18 36.7 DEC -8 13  
SA2000 16 URAN 295

from  $\alpha$  SCT go .4° E to ngc6664

date \_\_\_\_\_ site \_\_\_\_\_

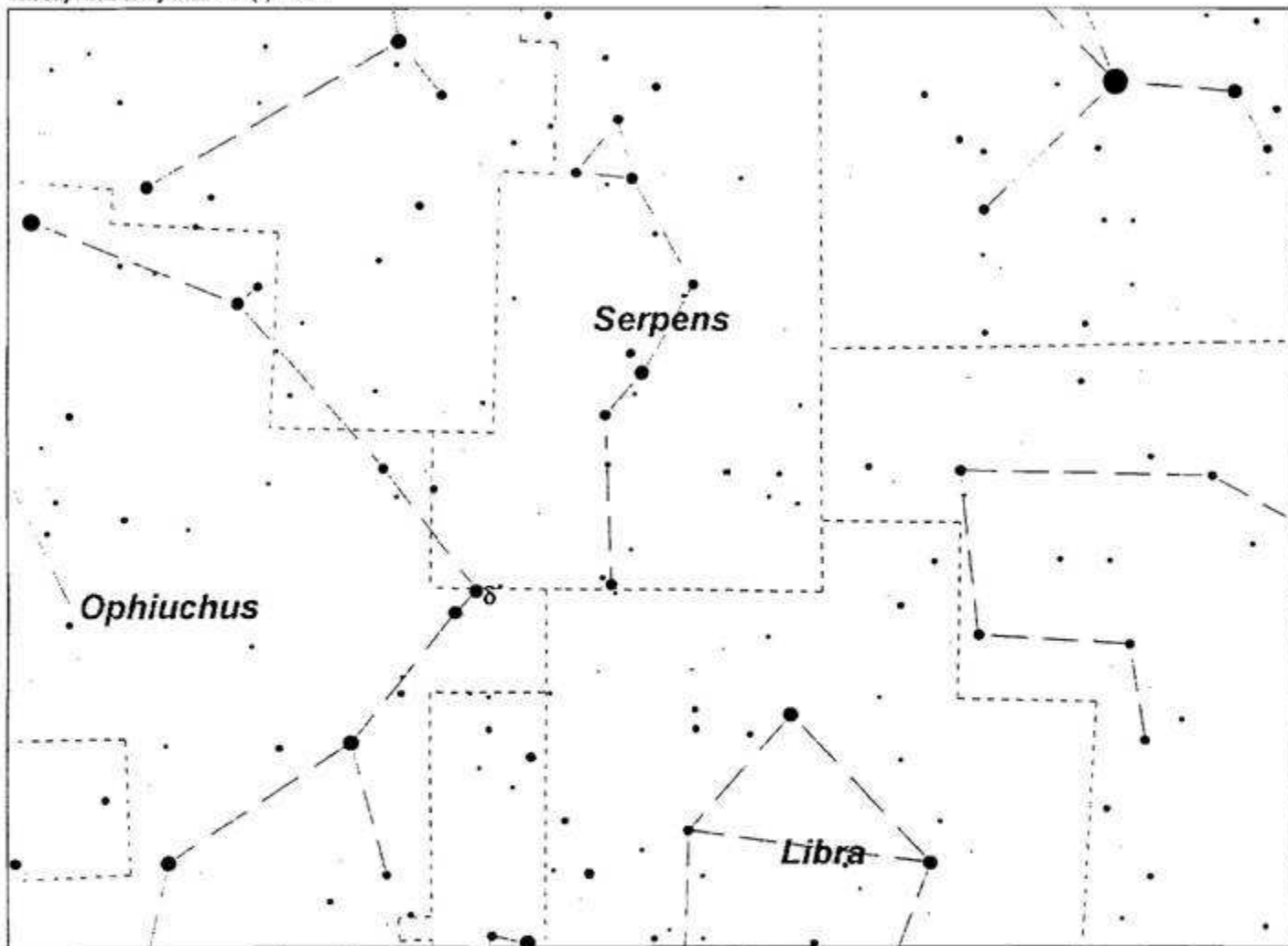
notes \_\_\_\_\_

ngc6712  
GC MAG 8.5  
RA 18 53.1 DEC -8 42  
SA2000 16 URAN 295

from ngc6664 go .5° S and 4.1° E to ngc6712

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



# SERPENS

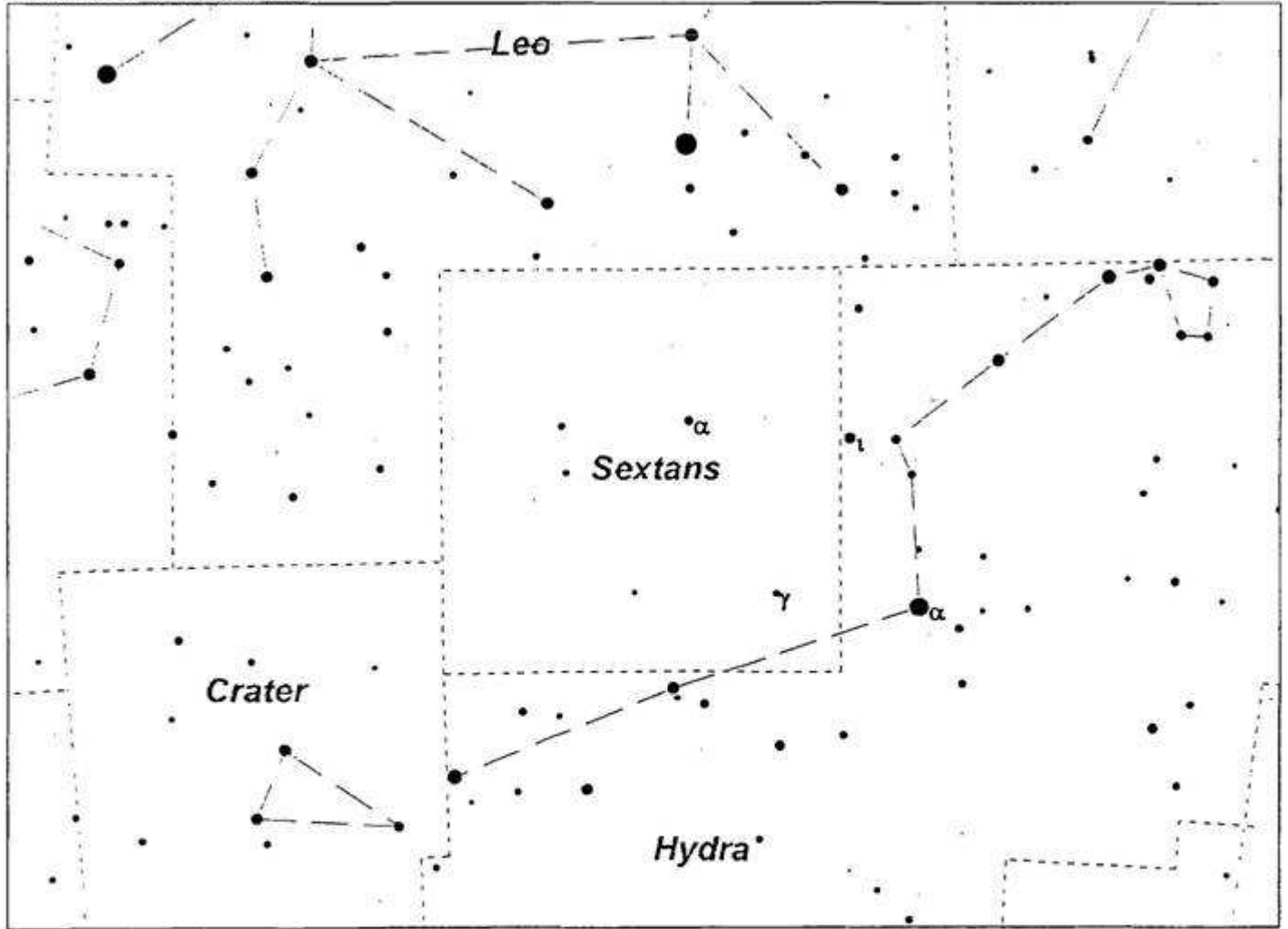
ngc6118  
GX MAG 12.0  
RA 16 21.9 DEC -2 17  
SA2000 15 URAN 246

from  $\delta$  OPH go 1.4° N and 1.8° E to ngc6118

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*OPHIUCHUS SEARCH SEQUENCE BEGINS AT  $\zeta$  OPH\*



# SEXTANS

ngc2974  
GX MAG 11.0  
RA 9 42.6 DEC -3 43  
SA2000 13 URAN 233

from  $\iota$  HYA go  $.7^\circ$  E and  $2.6^\circ$  S to ngc2974

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3115  
GX MAG 9.5  
RA 10 05.2 DEC -7 42  
SA2000 13 URAN 278/279

from  $\alpha$  HYA go  $.6^\circ$  N and  $6.2^\circ$  E to  $\gamma$  SEX

then

from  $\gamma$  SEX go  $.4^\circ$  N and  $3.1^\circ$  E to ngc3115

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3166  
GX MAG 10.5  
RA 10 13.8 DEC 3 26  
SA2000 13 URAN 234

from  $\alpha$  SEX go  $1.5^\circ$  E and  $3.7^\circ$  N to ngc3166

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

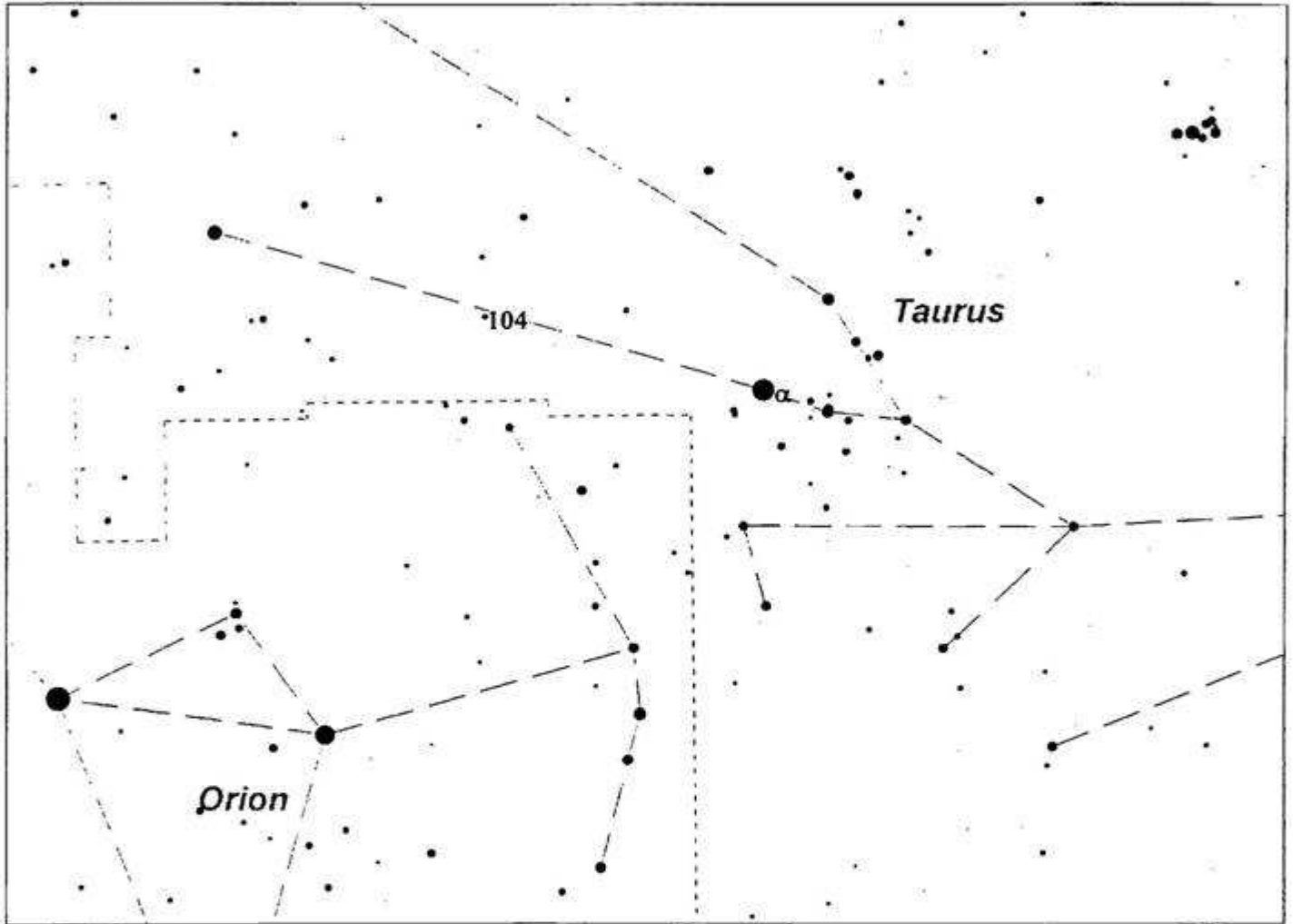
ngc3169  
GX MAG 10.5  
RA 10 14.2 DEC 3 29  
SA2000 13 URAN 234

ngc3169 lies  $.05^\circ$  N and  $.1^\circ$  E of ngc3166

\*sug targets 3521, 3640 Leo, and 3242 Hya\*

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



# TAURUS

ngc1647  
OC MAG 6.0  
RA 4 46.0 DEC 19 04  
SA2000 11 URAN 134

from  $\alpha$  TAU go 2.4° E and 2.5° N to ngc1647

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc1817  
OC MAG 8.0  
RA 5 12.1 DEC 16 42  
SA2000 11 URAN 134/135

from ngc1647 go .4° S and 5.1° E to star 104 TAU

then

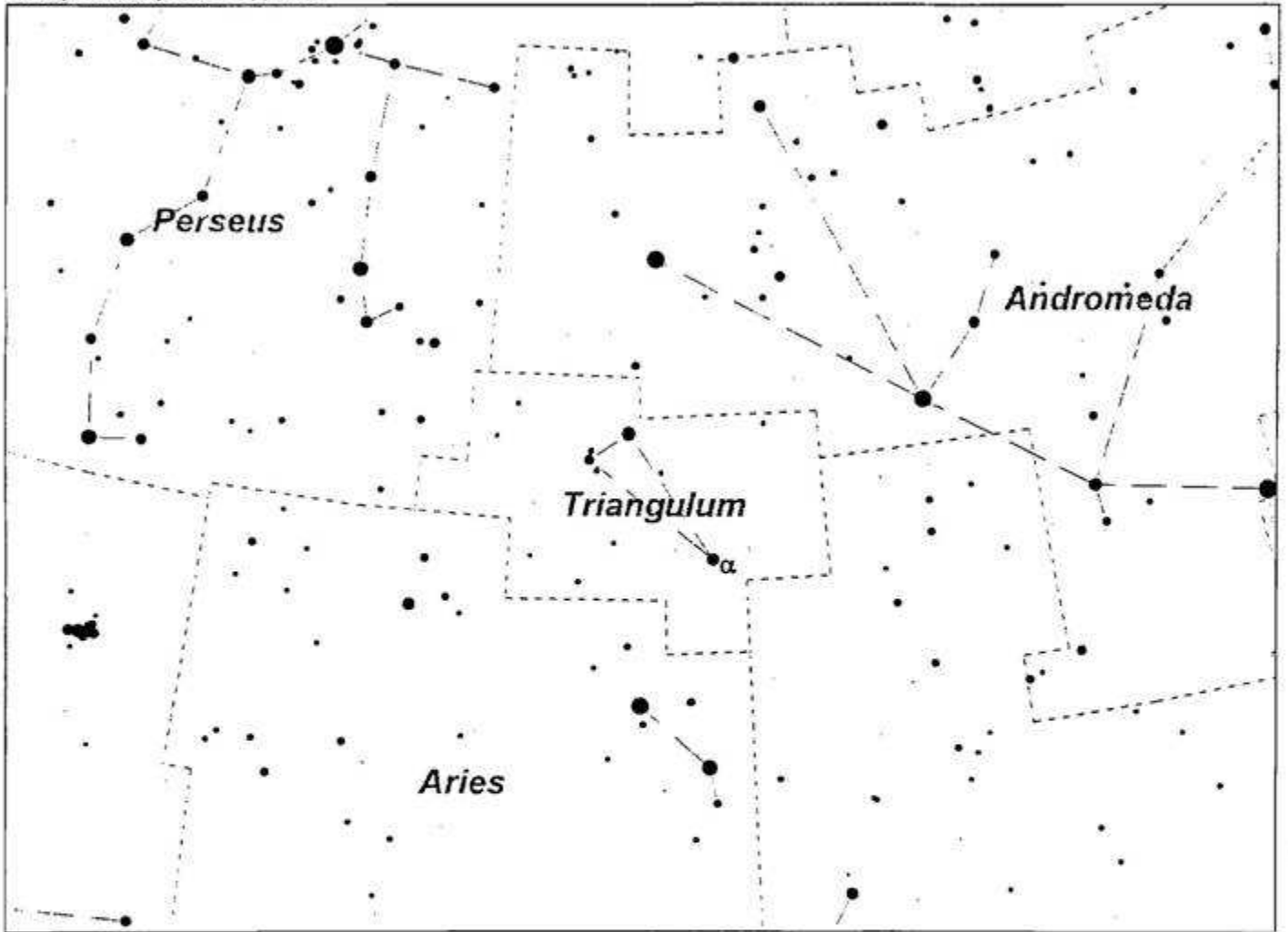
from star 104 TAU go 1.1° E and 1.9° S to ngc1817

OR

from  $\alpha$  TAU go .2° N and 8.7° E to ngc1817

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_





# TRIANGULUM

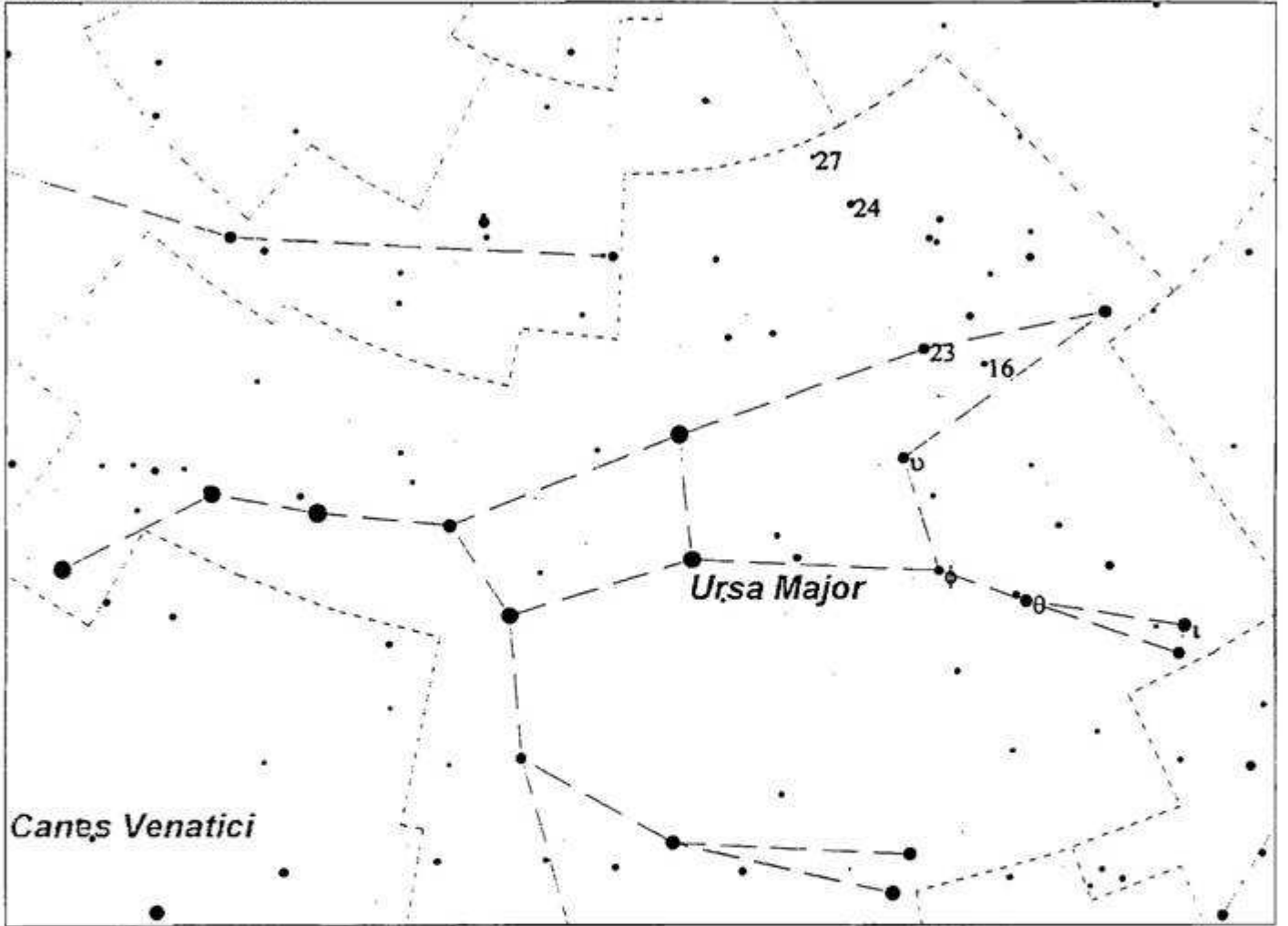
ngc598 (m33)  
GX MAG 5.5  
RA 1 33.9 DEC 30 40  
SA2000 4 URAN 92/91

from  $\alpha$  TRI go 1.0° N and 4.1° W to ngc598

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*PERSEUS SEARCH SEQUENCE BEGINS AT  $\phi$  PER\*  
\*ARIES SEARCH SEQUENCE BEGINS AT  $\gamma$  ARI\*



# URSA MAJOR

## WESTERN URSA MAJOR

ngc2681  
GX MAG 10.5  
RA 8 53.6 DEC 51 18  
SA2000 2 URAN 70/44

from  $\iota$  UMA go  $.9^\circ$  W and  $3.3^\circ$  N to ngc2681

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc2841  
GX MAG 9.5  
RA 9 22.0 DEC 50 59  
SA2000 2 URAN 44

from ngc2681 go  $.3^\circ$  S and  $4.5^\circ$  E to ngc2841  
OR

from  $\theta$  UMA go  $.7^\circ$  S and  $1.7^\circ$  W to ngc2841

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3079  
GX MAG 11.0  
RA 10 02.0 DEC 55 41  
SA2000 2 URAN 45

from  $\phi$  UMA go  $1.5^\circ$  E and  $1.6^\circ$  N to ngc3079

date \_\_\_\_\_ site \_\_\_\_\_

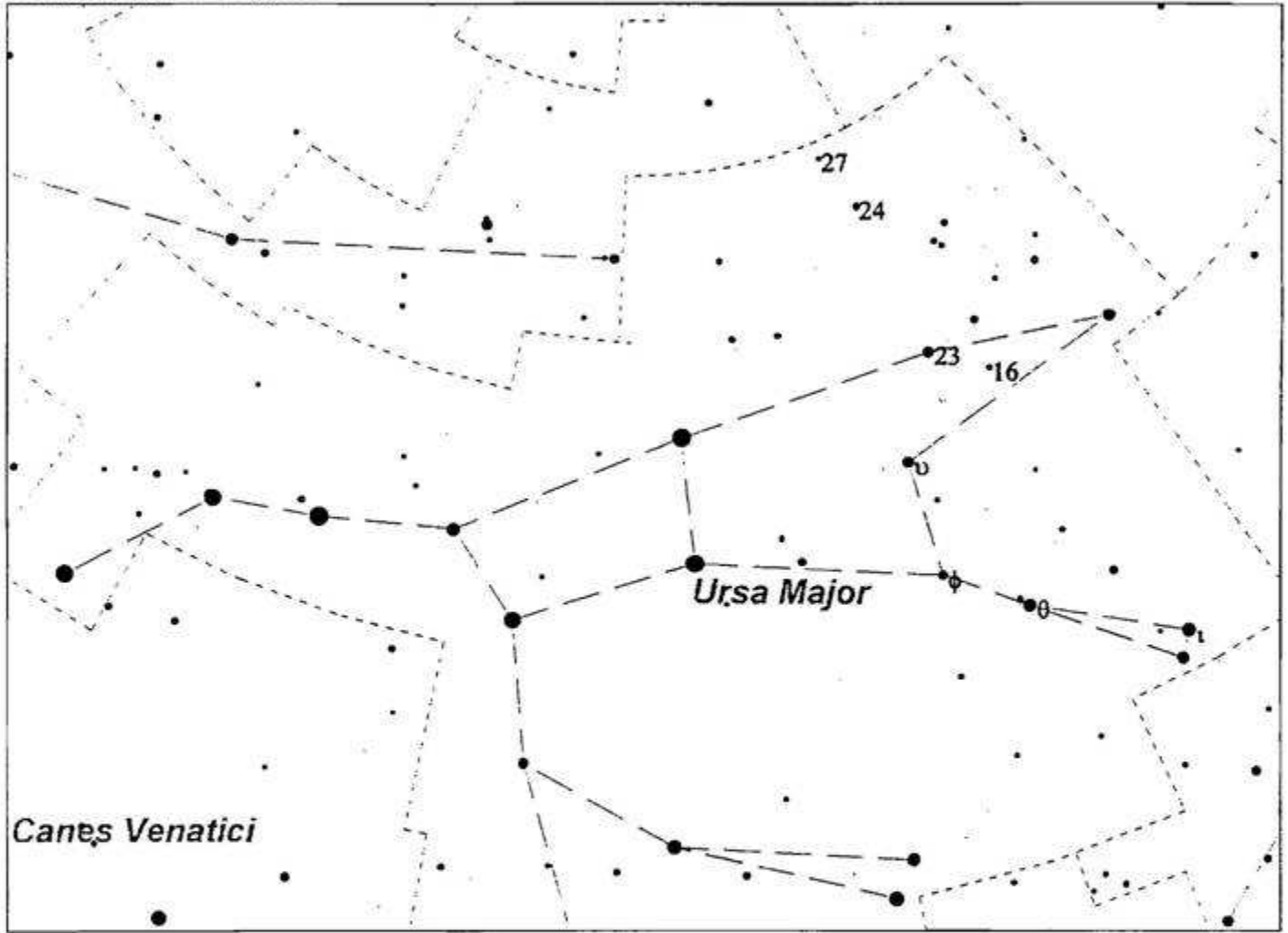
notes \_\_\_\_\_

ngc2950  
GX MAG 11.5  
RA 9 42.6 DEC 58 51  
SA2000 2 URAN 45

from  $\upsilon$  UMA go  $.2^\circ$  S and  $1.1^\circ$  W to ngc2950

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



## URSA MAJOR (continued)

ngc2768  
GX MAG 10.5  
RA 9 11.5 DEC 60 03  
SA2000 2 URAN 44

from ngc2950 go 1.2° N and 3.9° W to ngc2768  
OR  
from star 23 UMA go 1.6° S and 2.1° W to star 16 UMA  
then  
from star 16 UMA go .3° E and 1.4° S to ngc2768  
date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc2742  
GX MAG 12.0  
RA 9 07.6 DEC 60 29  
SA2000 2 URAN 44

from ngc2768 go .4° N and .5° W to ngc2742  
date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc2787  
GX MAG 11.0  
RA 9 19.3 DEC 69 13  
SA2000 2 URAN 23

from star 24 UMA go .6° S and 1.3° W to ngc2787  
date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3034 (m82)  
GX MAG 9.0  
RA 9 55.9 DEC 69 41  
SA2000 2 URAN 23

from ngc2787 go .1° S and 3.2° E to m81  
ngc3034 lies .6° N of m81  
(make observation and return to m81)

date \_\_\_\_\_ site \_\_\_\_\_

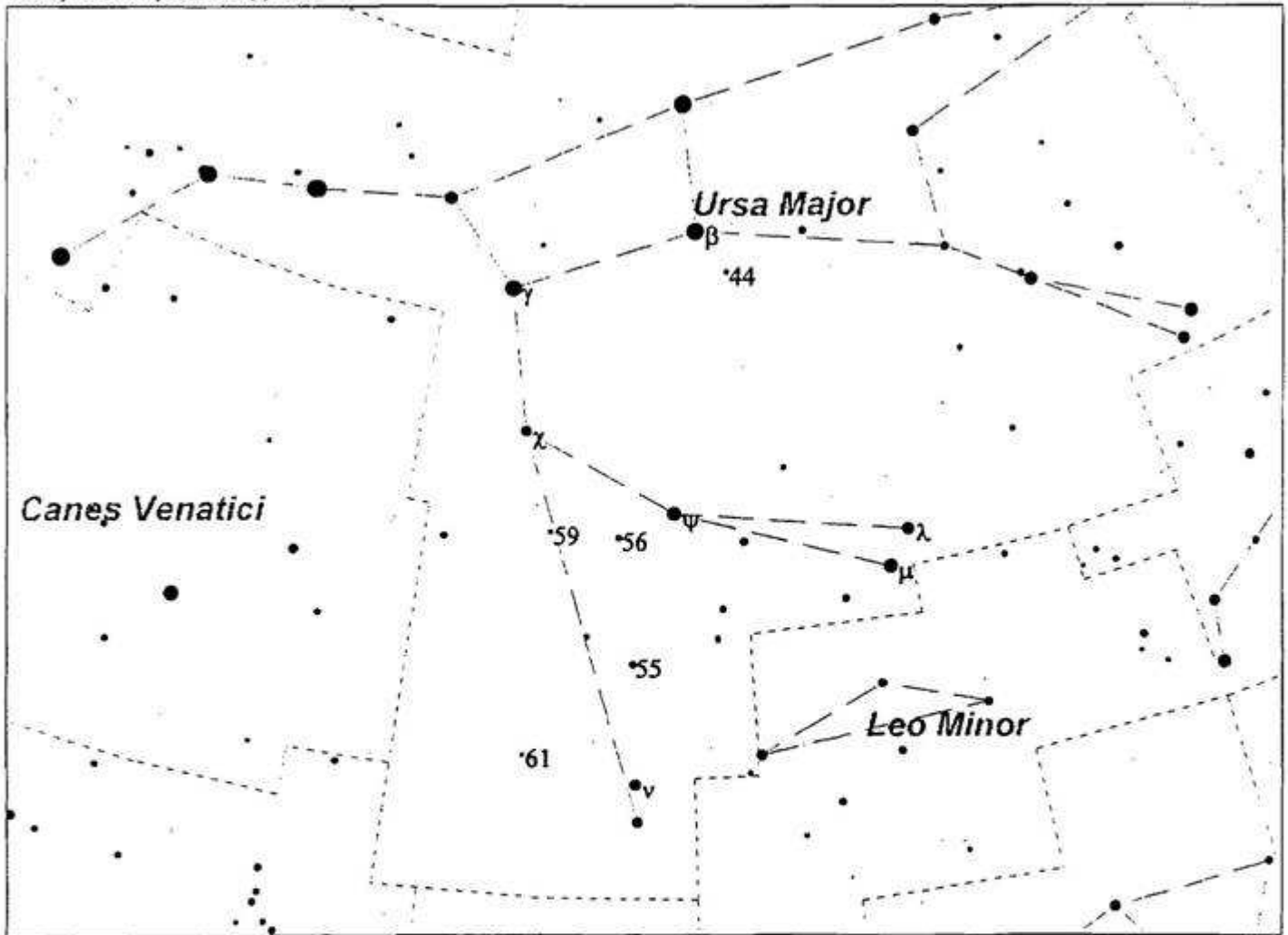
notes \_\_\_\_\_

ngc3077  
GX MAG 10.0  
RA 10 03.4 DEC 68 45  
SA2000 2 URAN 23

from m81 go .3° S and .7° E to ngc3077  
(make observation and return to m81)

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



## URSA MAJOR (continued)

ngc2976  
GX MAG 10.0  
RA 9 47.3 DEC 67 55  
SA2000 2 URAN 23

from m81 go  $.7^{\circ}$  W and  $1.1^{\circ}$  S to ngc2976

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc2985  
GX MAG 10.5  
RA 9 50.3 DEC 72 17  
SA2000 2 URAN 23

from ngc2976 go  $.3^{\circ}$  E and  $4.4^{\circ}$  N to ngc2985  
OR  
from star 24 UMA go  $.7^{\circ}$  E and  $2.4^{\circ}$  N to star 27 UMA  
then  
from star 27 UMA go  $.6^{\circ}$  E to ngc2985  
\*sug targets 3147 Dra and 2655 Cam\*

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

### CENTRAL URSA MAJOR

ngc3184  
GX MAG 10.0  
RA 10 18.3 DEC 41 25  
SA2000 6 URAN 72

from  $\mu$  UMA go  $.1^{\circ}$  S and  $.7^{\circ}$  W to ngc3184

date \_\_\_\_\_ site \_\_\_\_\_

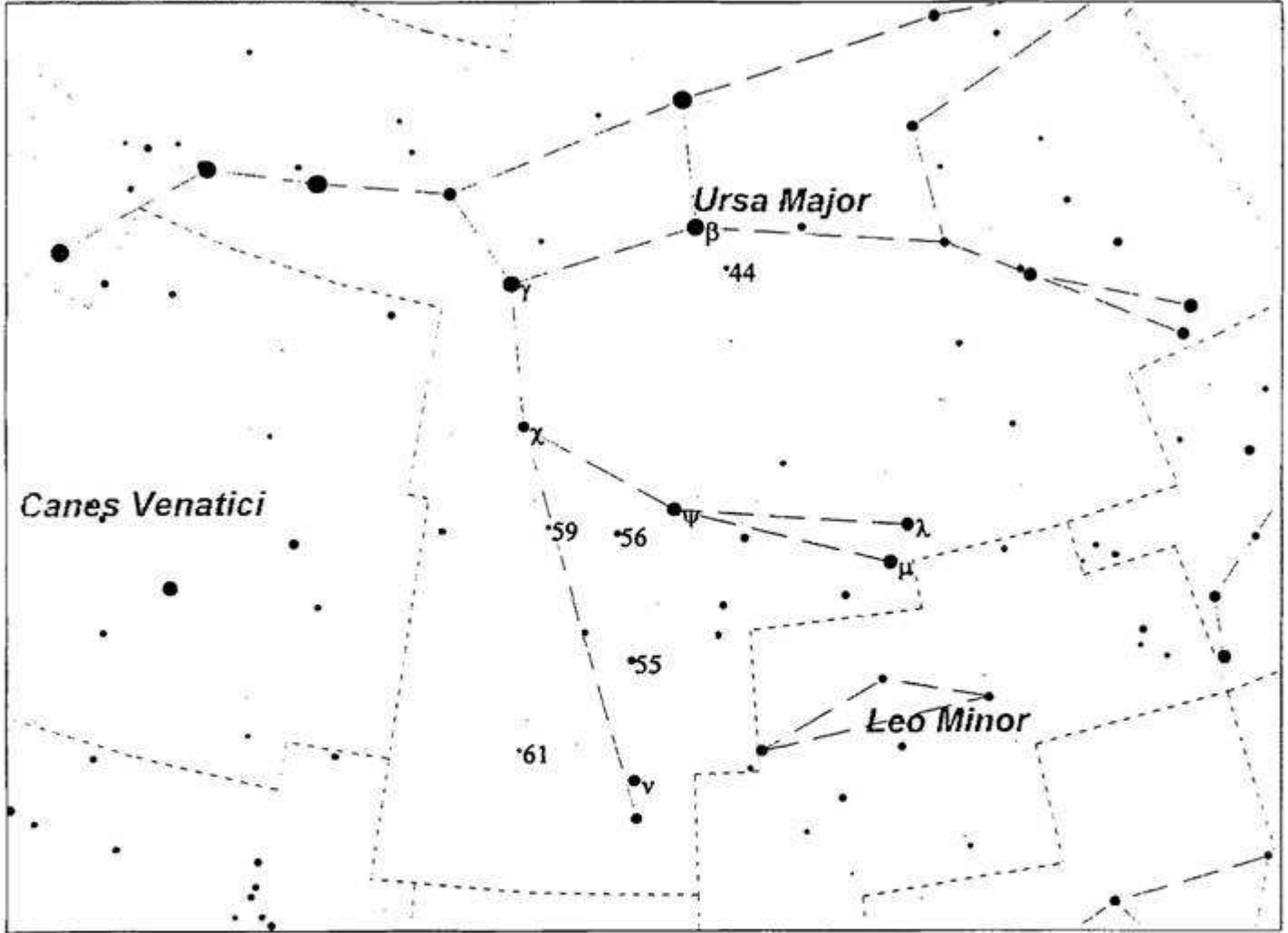
notes \_\_\_\_\_

ngc3198  
GX MAG 10.5  
RA 10 19.9 DEC 45 32  
SA2000 6 URAN 72

from ngc3184 go  $.2^{\circ}$  W and  $1.5^{\circ}$  N to  $\lambda$  UMA  
then  
from  $\lambda$  UMA go  $.5^{\circ}$  E and  $2.6^{\circ}$  N to ngc3198

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_





## URSA MAJOR (continued)

ngc3310  
GX MAG 11.0  
RA 10 38.8 DEC 53 30  
SA2000 2 URAN 46

from  $\beta$  UMA go 1.2° W and 1.8° S to star 44 UMA  
then  
from star 44 UMA go 1.1° S and 2.2° W to ngc3310

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3556 (m108)  
GX MAG 10.0  
RA 11 11.6 DEC 55 41  
SA2000 2 URAN 46

from  $\beta$  UMA go .7° S and 1.4° E to ngc3556

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3631  
GX MAG 10.5  
RA 11 21.0 DEC 53 11  
SA2000 2 URAN 46

from ngc3536 go 1.3° E and 2.5° S to ngc3631

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3729  
GX MAG 11.5  
RA 11 33.9 DEC 53 08  
SA2000 2 URAN 46/47

from ngc3631 go 1.9° E to ngc3729

date \_\_\_\_\_ site \_\_\_\_\_

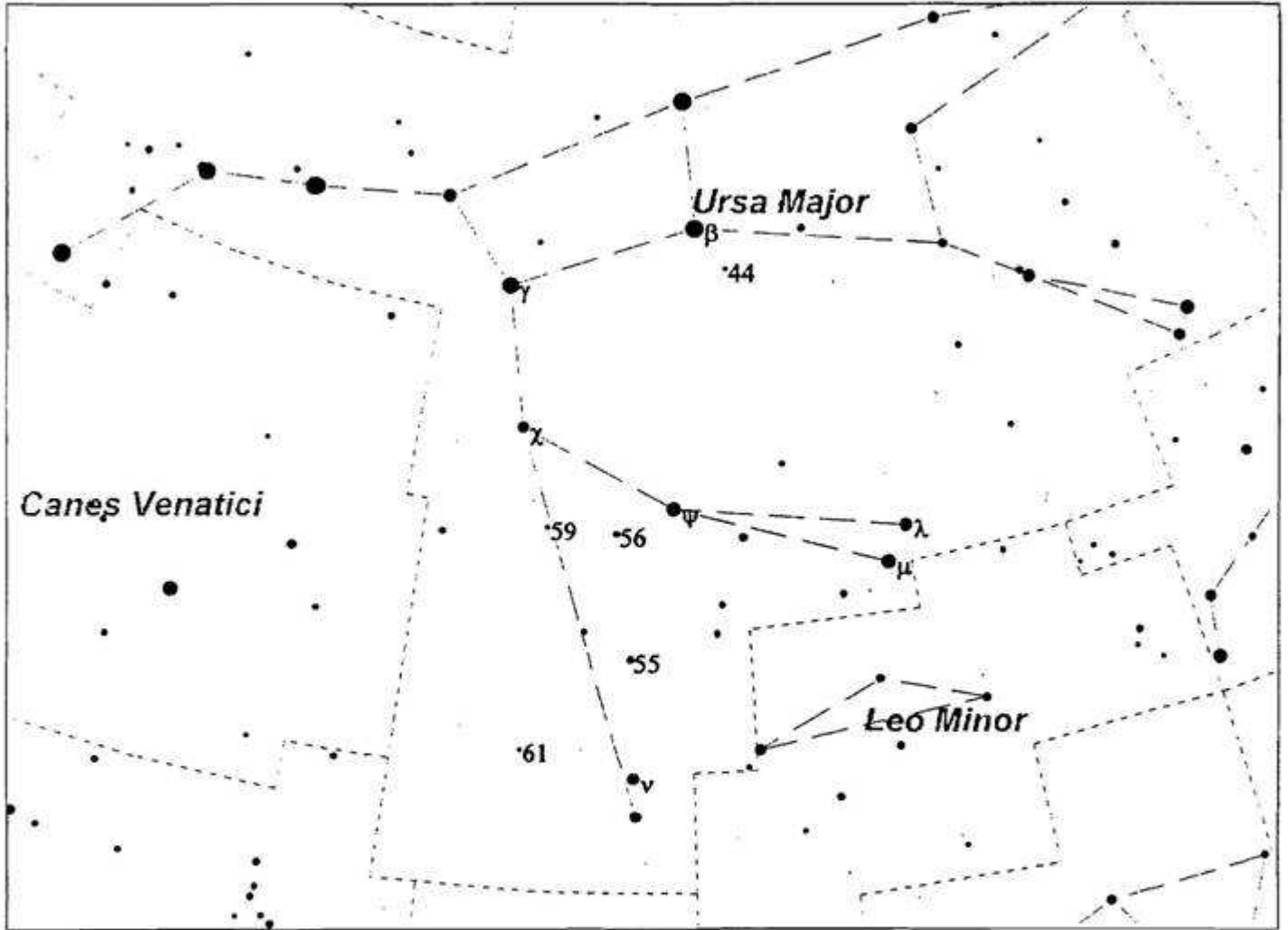
notes \_\_\_\_\_

ngc3619  
GX MAG 12.5  
RA 11 19.3 DEC 57 46  
SA2000 2 URAN 46

from  $\beta$  UMA go 1.4° N and 2.4° E to ngc3619

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



## URSA MAJOR (continued)

ngc3613  
GX MAG 12.0  
RA 11 18.6 DEC 58 00  
SA2000 2 URAN 46

from ngc3619 go .1° W and .2° N to ngc3613

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3610  
GX MAG 11.5  
RA 11 18.4 DEC 58 48  
SA2000 2 URAN 46

from ngc3613 go .8° N to ngc3610

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3945  
GX MAG 11.0  
RA 11 53.2 DEC 60 41  
SA2000 2 URAN 46/47

from ngc3610 go 1.9° N and 4.3° E to ngc3945

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4036  
GX MAG 10.5  
RA 12 01.5 DEC 61 54  
SA2000 2 URAN 47

from ngc3945 go 1.0° E and 1.2° N to ngc4036

date \_\_\_\_\_ site \_\_\_\_\_

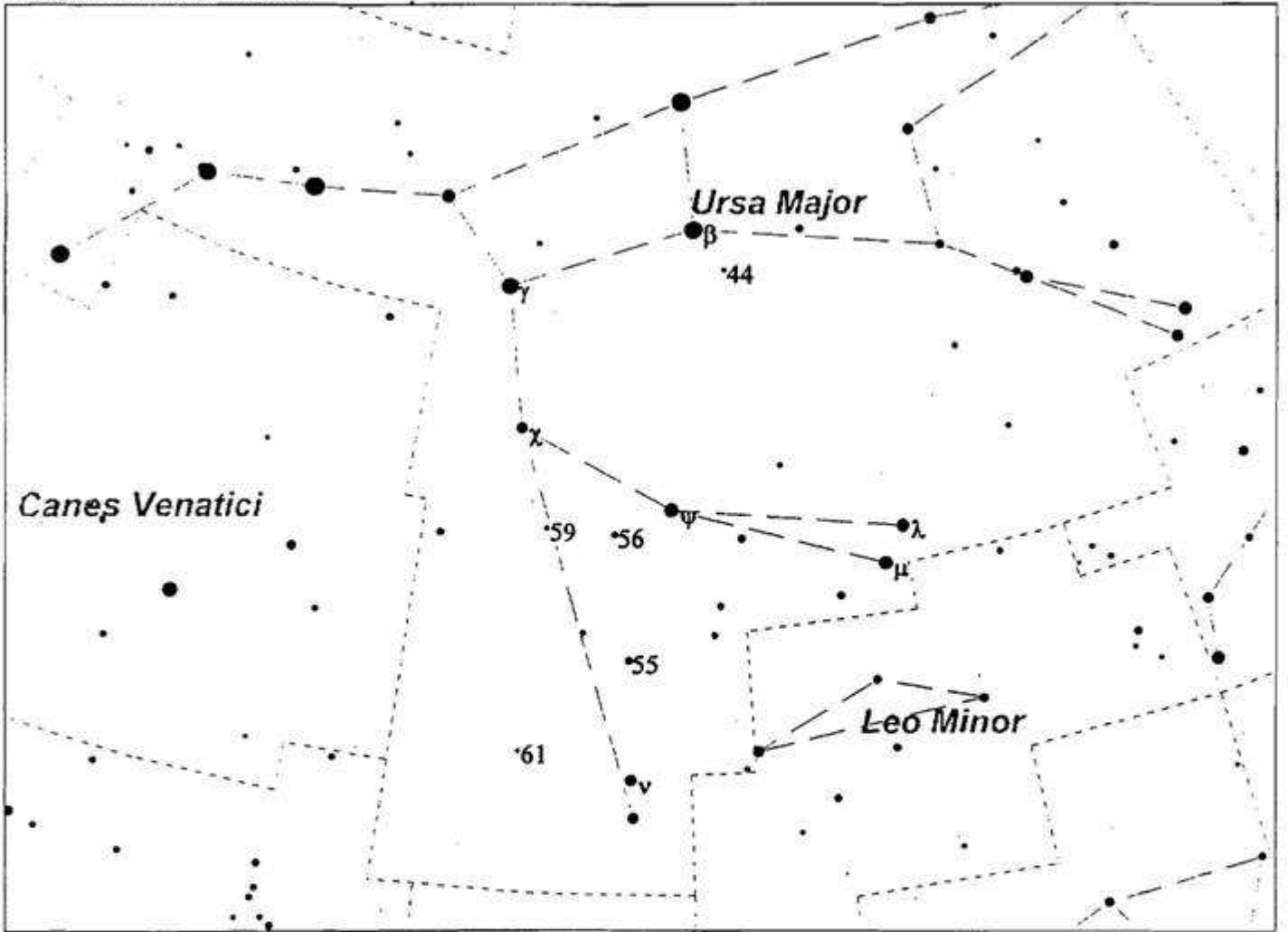
notes \_\_\_\_\_

ngc4041  
GX MAG 11.0  
RA 12 02.2 DEC 62 09  
SA2000 2 URAN 47

from ngc4036 go .1° E and .2° N to ngc4041

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



## URSA MAJOR (continued)

ngc3982  
GX MAG 12.0  
RA 11 56.5 DEC 55 08  
SA2000 2 URAN 47

from  $\gamma$  UMA go .4° E and 1.4° N to ngc3982

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3998  
GX MAG 10.5  
RA 11 58.0 DEC 55 28  
SA2000 2 URAN 47

from ngc3982 go .2° E and .3° N to ngc3998

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3898  
GX MAG 11.0  
RA 11 49.2 DEC 56 06  
SA2000 2 URAN 47

from ngc3998 go .6° N and 1.2° W to ngc3898

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3992 (m109)  
GX MAG 10.0  
RA 11 57.6 DEC 53 23  
SA2000 2 URAN 47

from  $\gamma$  UMA go .3° S and .6° E to ngc3992

date \_\_\_\_\_ site \_\_\_\_\_

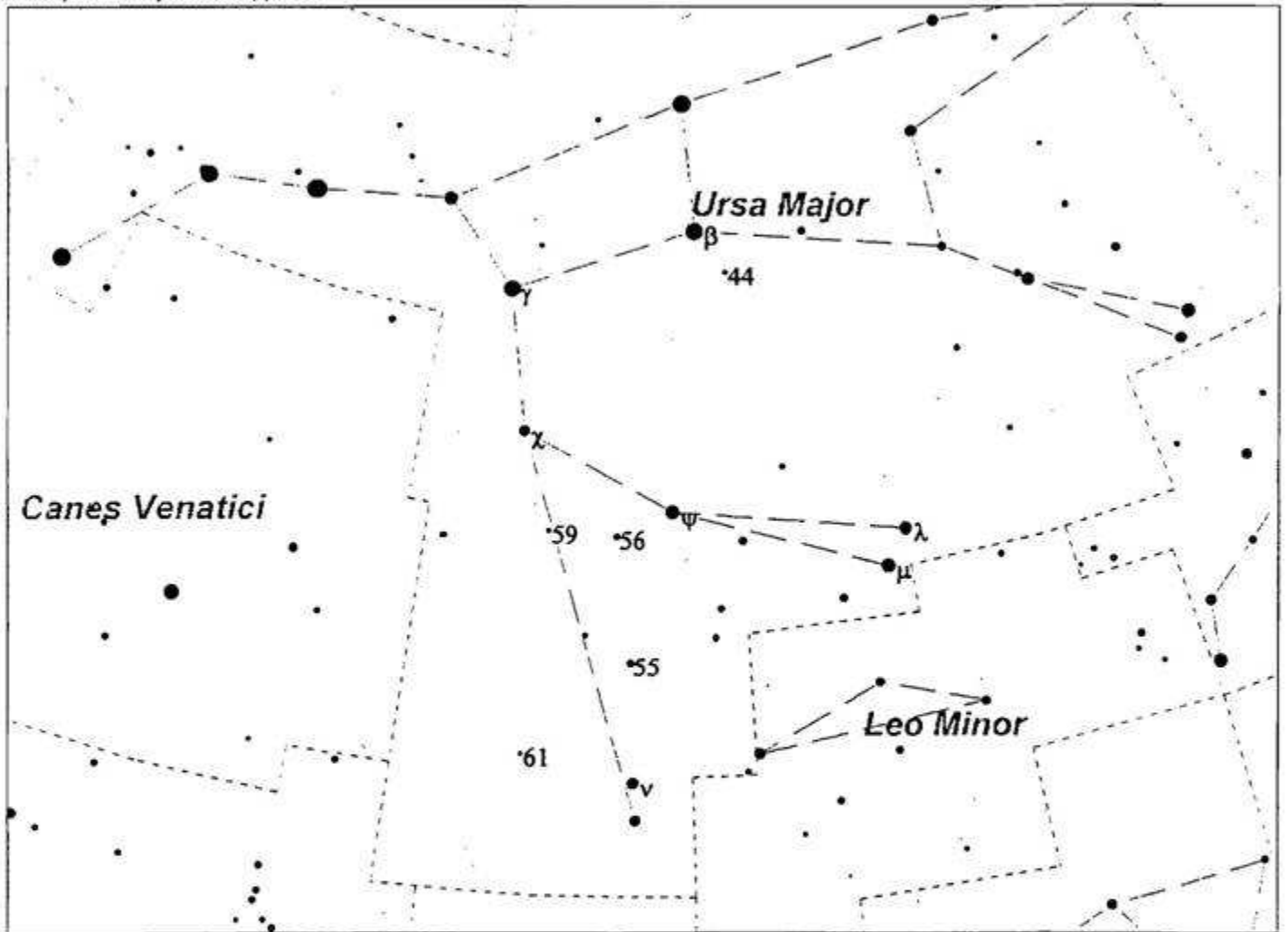
notes \_\_\_\_\_

ngc4102  
GX MAG 12.0  
RA 12 06.5 DEC 52 43  
SA2000 2 URAN 47

from ngc3992 go .7° S and 1.3° E to ngc4102

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



## URSA MAJOR (continued)

ngc3953

GX MAG 10.0

RA 11 53.8 DEC 52 20

SA2000 2 URAN 47

from ngc4102 go .4° S and 1.9° W to ngc3953

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4026

GX MAG 12.0

RA 11 59.4 DEC 50 58

SA2000 2 URAN 47

from ngc3953 go .9° E and 1.4° S to ngc4026

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4088

GX MAG 10.5

RA 12 05.6 DEC 50 33

SA2000 2 URAN 47

from ngc4026 go .4° S and 1.0° E to ngc4088

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4085

GX MAG 12.5

RA 12 05.4 DEC 50 22

SA2000 2 URAN 47

from ngc4088 go .2° S to ngc4085

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3877

GX MAG 12.0

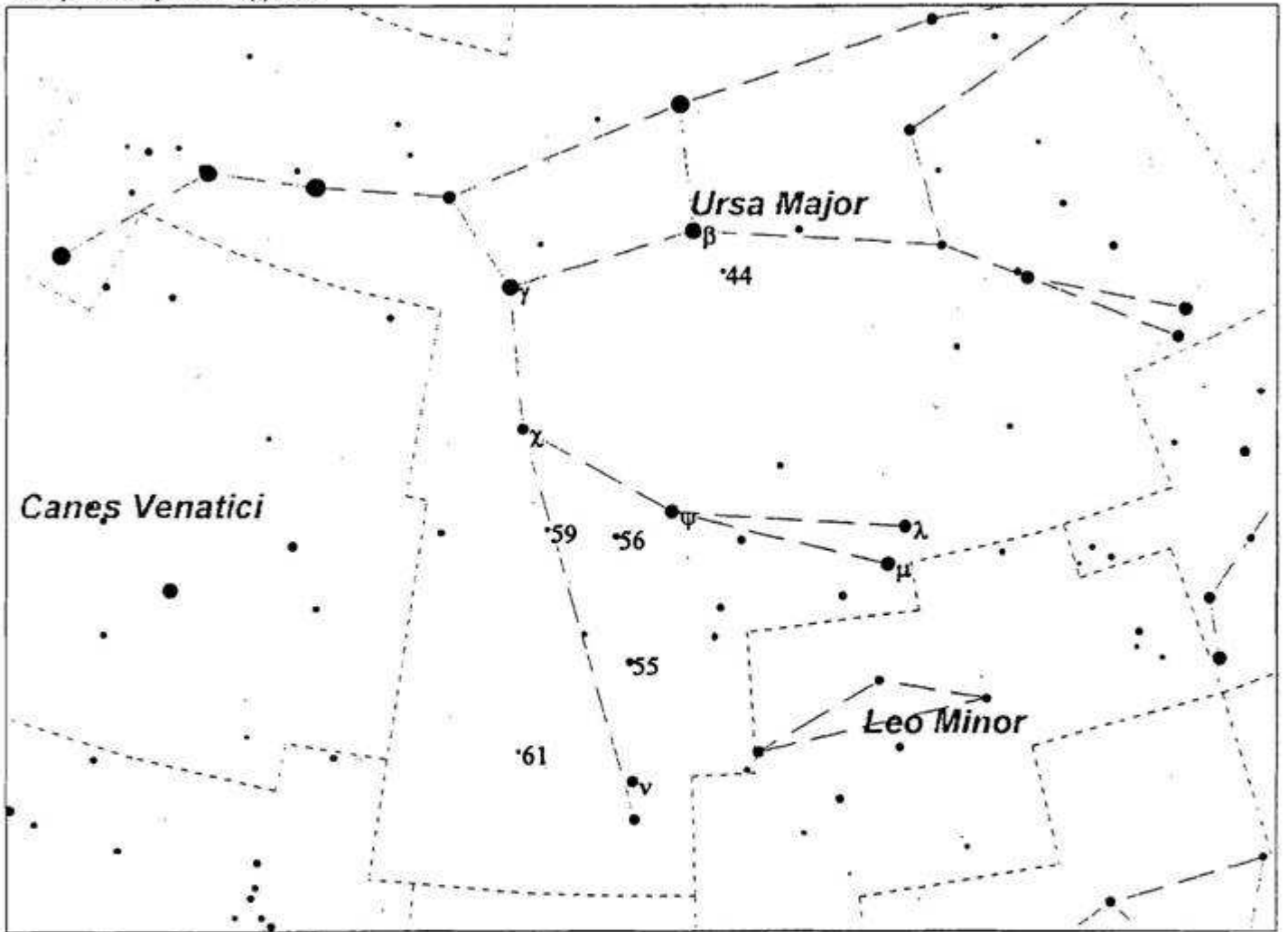
RA 11 46.1 DEC 47 30

SA2000 2 URAN 74

from  $\chi$  UMA go .3° S to ngc3877  
(make observation and recenter  $\chi$  UMA)

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_





## URSA MAJOR (continued)

ngc3893  
GX MAG 11.0  
RA 11 48.6 DEC 48 43  
SA2000 2 URAN 74

from  $\chi$  UMA go .4° E and .9° N to ngc3893  
(make observation and return to  $\chi$  UMA)

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3949  
GX MAG 11.0  
RA 11 53.7 DEC 47 52  
SA2000 2 URAN 74

from  $\chi$  UMA go .1° N and 1.3° E to ngc3949  
(make observation and return to  $\chi$  UMA)

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3726  
GX MAG 10.5  
RA 11 33.4 DEC 47 02  
SA2000 2 URAN 74

from  $\chi$  UMA go .7° S and 2.2° W to ngc3726

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3675  
GX MAG 11.0  
RA 11 26.2 DEC 43 36  
SA2000 2 URAN 73

from ngc3726 go 1.2° W and 3.5° S to ngc3675  
OR

from  $\psi$  UMA go 1.0° S and 2.4° E to star 56 UMA  
then

from star 56 UMA go .1° N and .6° E to ngc3675

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3938  
GX MAG 10.5  
RA 11 52.8 DEC 44 08  
SA2000 2 URAN 73/74

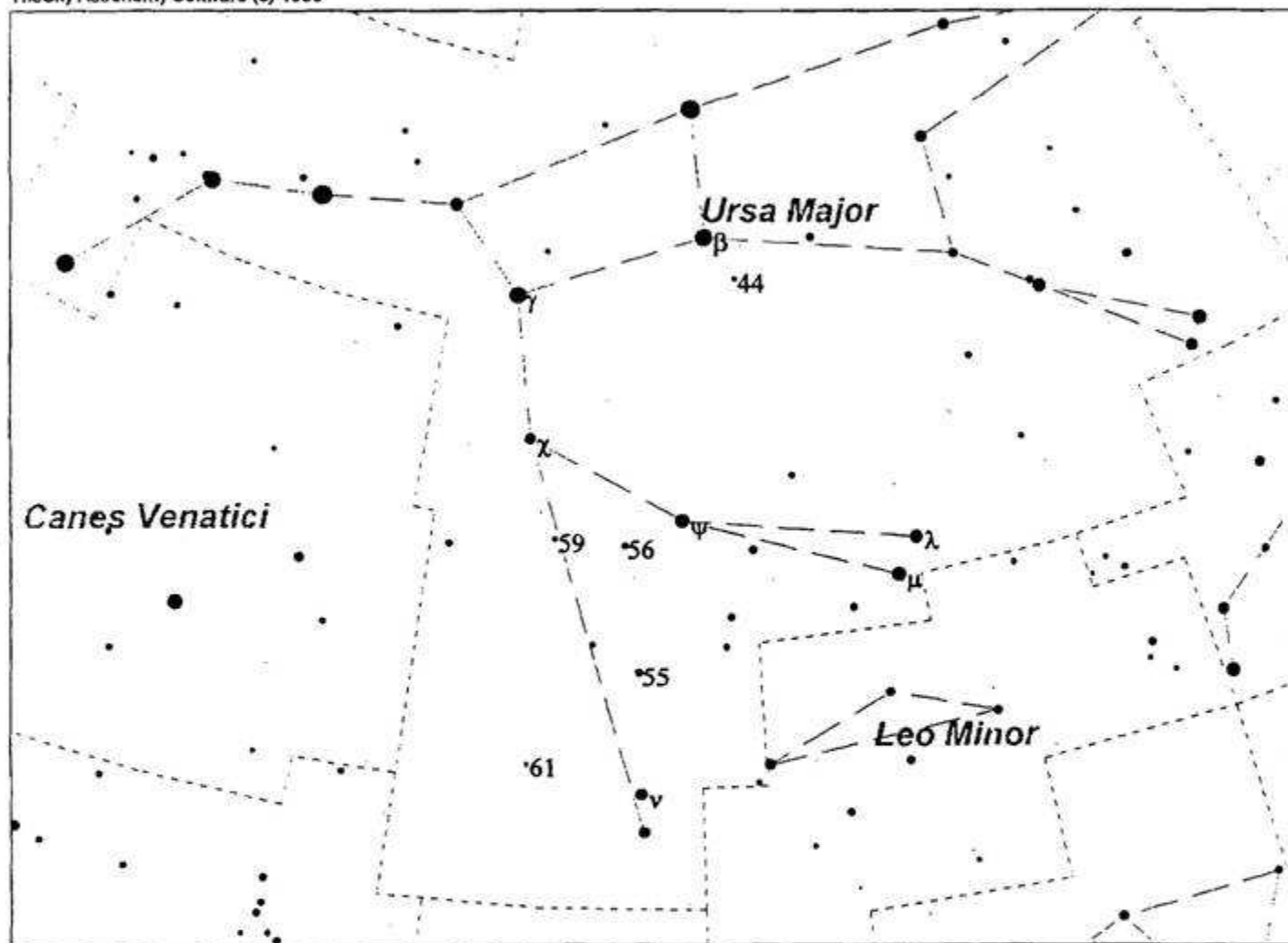
from ngc3675 go 2.2° E to star 59 UMA  
then

from star 59 UMA go .5° N and 2.6° E to ngc3938  
OR

from  $\chi$  UMA go 1.1° E and 3.6° S to ngc3938

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



## URSA MAJOR (continued)

ngc4051  
GX MAG 10.5  
RA 12 04.2 DEC 44 33  
SA2000 2 URAN 74

from ngc3938 go .4° N and 1.8° E to ngc4051  
\*sug targets 4111 and 4143 CnV\*

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3665  
GX MAG 11.0  
RA 11 23.3 DEC 38 54  
SA2000 6 URAN 106

from v UMA go .2° E and 5.1° N to star 55 UMA  
then  
from star 55 UMA go .6° N and 1.1° E to ngc3665

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc3813  
GX MAG 12.0  
RA 11 41.3 DEC 36 33  
SA2000 6 URAN 106

from ngc3665 go 2.2° S and 3.3° E to ngc3813  
OR  
from v UMA go 1.1° N and 4.7° E to star 61 UMA  
then  
from star 61 UMA go .1° E and 2.3° N to ngc3813

date \_\_\_\_\_ site \_\_\_\_\_

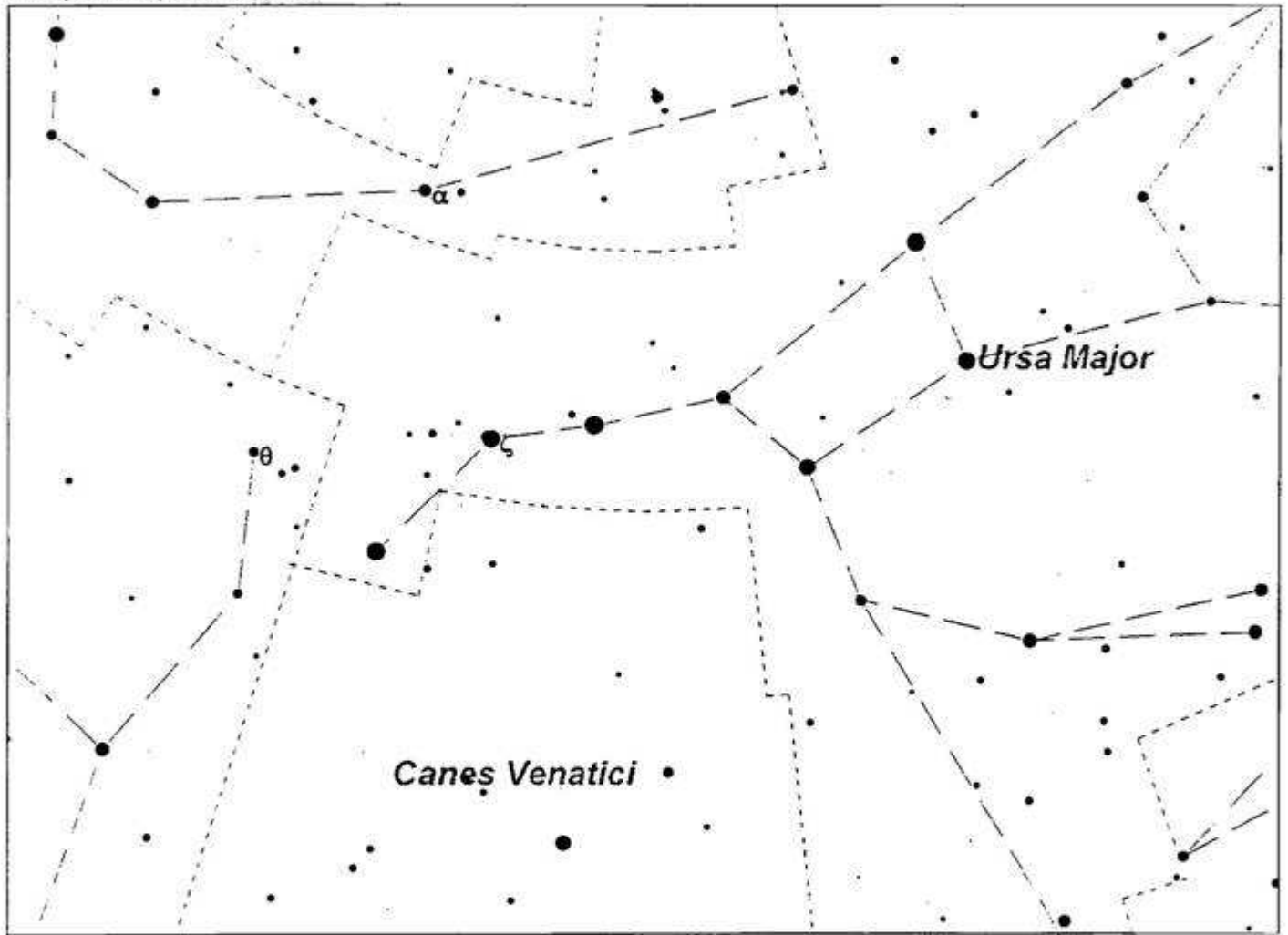
notes \_\_\_\_\_

ngc3941  
GX MAG 11.0  
RA 11 52.9 DEC 37 00  
SA2000 6 URAN 107

from ngc3813 go .4° N and 2.3° E to ngc3941  
\*sug targets 4214, 4151 CnV, and 4203 Com\*

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



## URSA MAJOR (continued)

### EASTERN URSA MAJOR

ngc5474  
GX MAG 11.0  
RA 14 05.1 DEC 53 40  
SA2000 2 URAN 49

from  $\zeta$  UMA go  $.6^\circ$  S and  $5.7^\circ$  E to m101  
then  
from m101 go  $.3^\circ$  E and  $.7^\circ$  S to ngc5474

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc5473  
GX MAG 11.5  
RA 14 04.8 DEC 54 54  
SA2000 2 URAN 49

from ngc5474 go  $.05^\circ$  W and  $1.2^\circ$  N to ngc5473

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc5631  
GX MAG 12.5  
RA 14 26.6 DEC 56 34  
SA2000 2 URAN 49

from ngc5473 go  $1.7^\circ$  N and  $3.0^\circ$  E to ngc5631  
OR  
from  $\theta$  BOO go  $.2^\circ$  E and  $4.7^\circ$  N to ngc5631

date \_\_\_\_\_ site \_\_\_\_\_

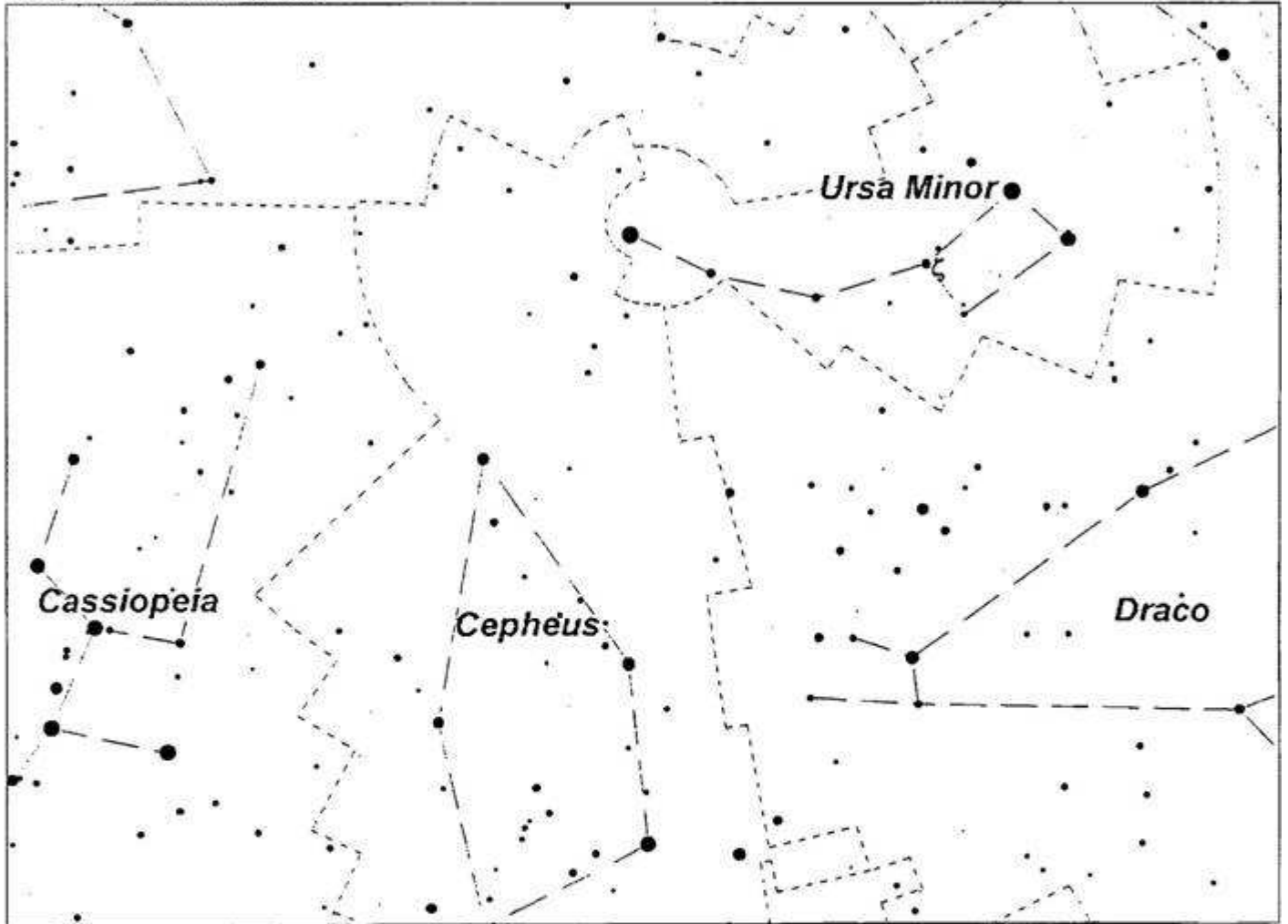
notes \_\_\_\_\_

ngc5322  
GX MAG 10.5  
RA 13 49.2 DEC 60 12  
SA2000 2 URAN 27

from  $\alpha$  DRA go  $1.6^\circ$  W and  $4.2^\circ$  S to ngc5322  
OR  
from  $\zeta$  UMA go  $3.6^\circ$  E and  $5.2^\circ$  N to ngc5322

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



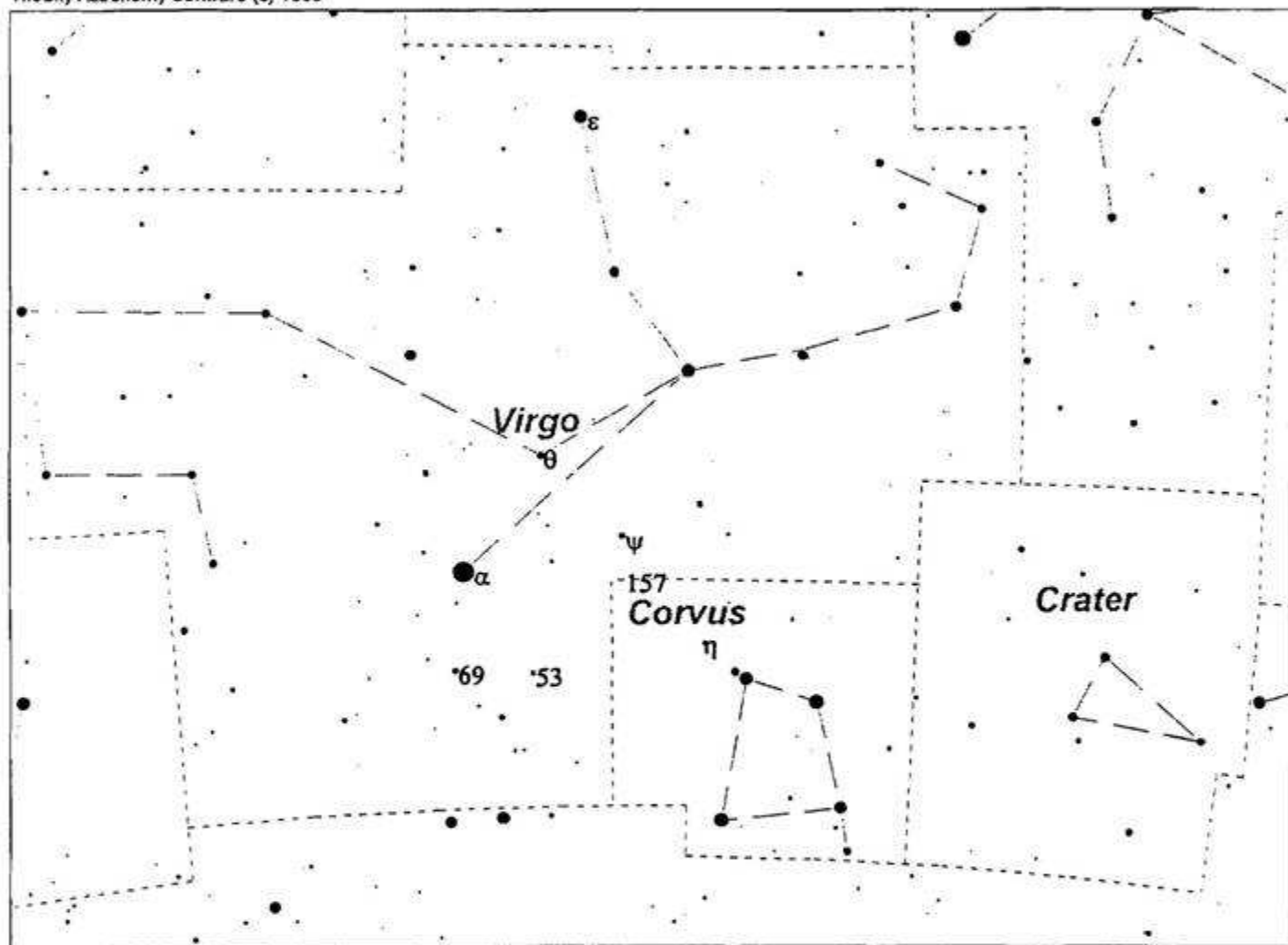
# URSA MINOR

ngc6217  
GX MAG 11.0  
RA 16 32.6 DEC 78 12  
SA2000 2 URAN 11

from  $\zeta$  UMI go .4° N and 2.5° E to ngc6217

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_





# VIRGO

## SOUTHERN VIRGO

\*SOUTHERN DECLINATION ADVISORY\*

ngc4995  
GX MAG 11.0  
RA 13 09.6 DEC -7 50  
SA2000 14 URAN 285

from  $\theta$  VIR go  $.1^\circ$  W and  $2.3^\circ$  S to ngc4995

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4958  
GX MAG 10.5  
RA 13 05.7 DEC -8 01  
SA2000 14 URAN 285

from ngc4995 go  $.2^\circ$  S and  $1.0^\circ$  W to ngc4958

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4699  
GX MAG 10.0  
RA 12 49.1 DEC -8 40  
SA2000 14 URAN 284

from ngc4958 go  $.6^\circ$  S and  $4.2^\circ$  W to ngc4699

OR

from  $\psi$  VIR go  $.9^\circ$  N and  $1.3^\circ$  W to ngc4699

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4781  
GX MAG 12.0  
RA 12 54.4 DEC -10 32  
SA2000 14 URAN 284

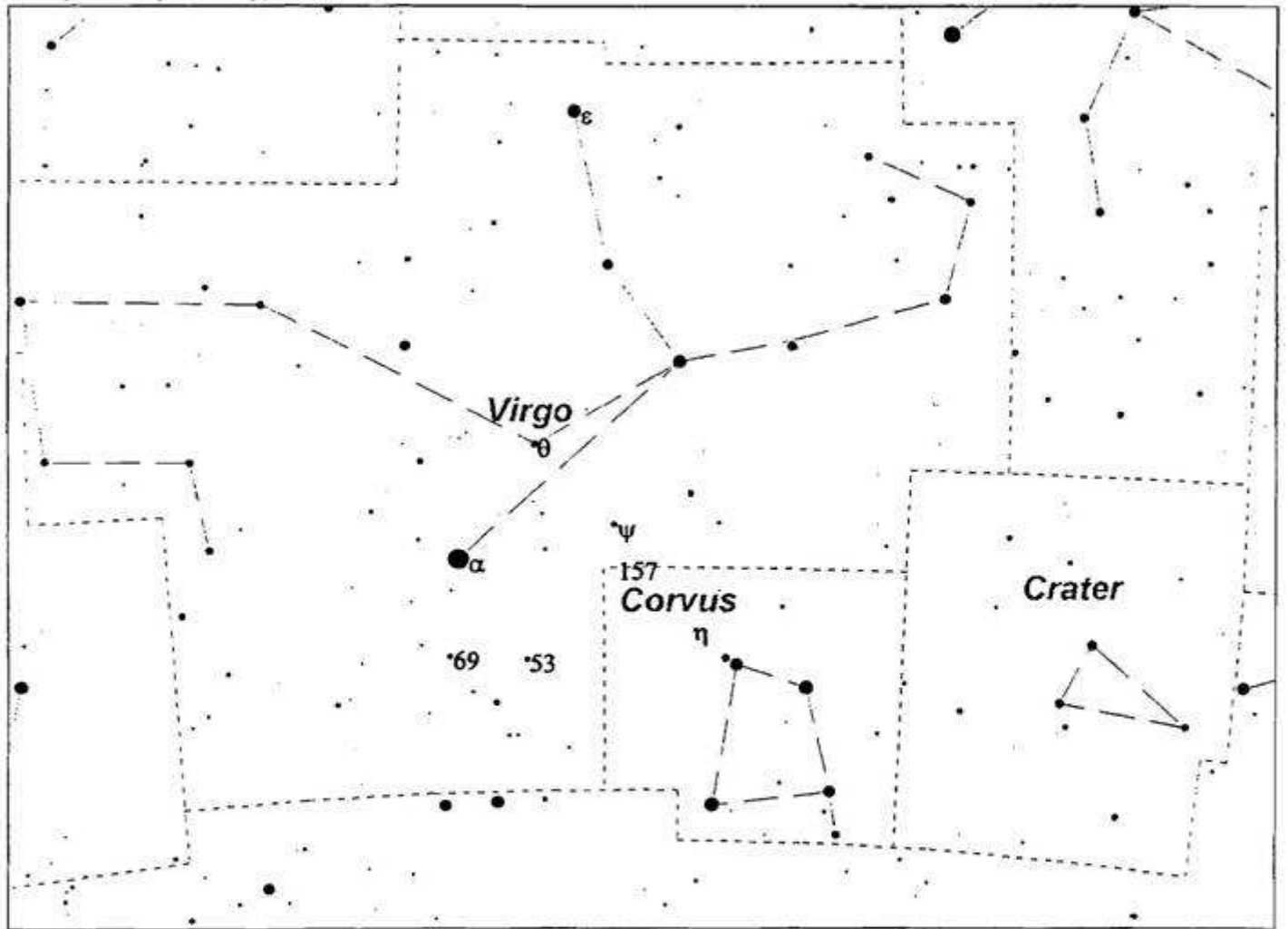
from ngc4699 return  $.9^\circ$  S and  $1.3^\circ$  E to  $\psi$  VIR

then

from  $\psi$  VIR go  $1.0^\circ$  S to ngc4781

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



## VIRGO (continued)

ngc4594 (m104)  
GX MAG 8.5  
RA 12 39.9 DEC -11 37  
SA2000 14 URAN 284

from ngc4781 go 1.1° S to star marked '157'  
then  
from star marked '157' go 3.5° W to ngc4594  
OR  
from  $\eta$  CRV go 1.9° E and 4.5° N to ngc4594

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc5054  
GX MAG 11.0  
RA 13 16.9 DEC -16 39  
SA2000 14 URAN 285

from  $\alpha$  VIR go .6° E and 4.8° S to star 69 VIR  
then  
from star 69 VIR go .7° S and 2.5° W to ngc5054

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4856  
GX MAG 10.5  
RA 12 59.3 DEC -15 02  
SA2000 14 URAN 285/284

from ngc5054 go .4° N and 1.2° W to star 53 VIR  
then  
from star 53 VIR go 1.2° N and 3.1° W to ngc4856  
OR  
from  $\eta$  CRV go 1.1° N and 6.6° E to ngc4856

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

### NORTHERN VIRGO

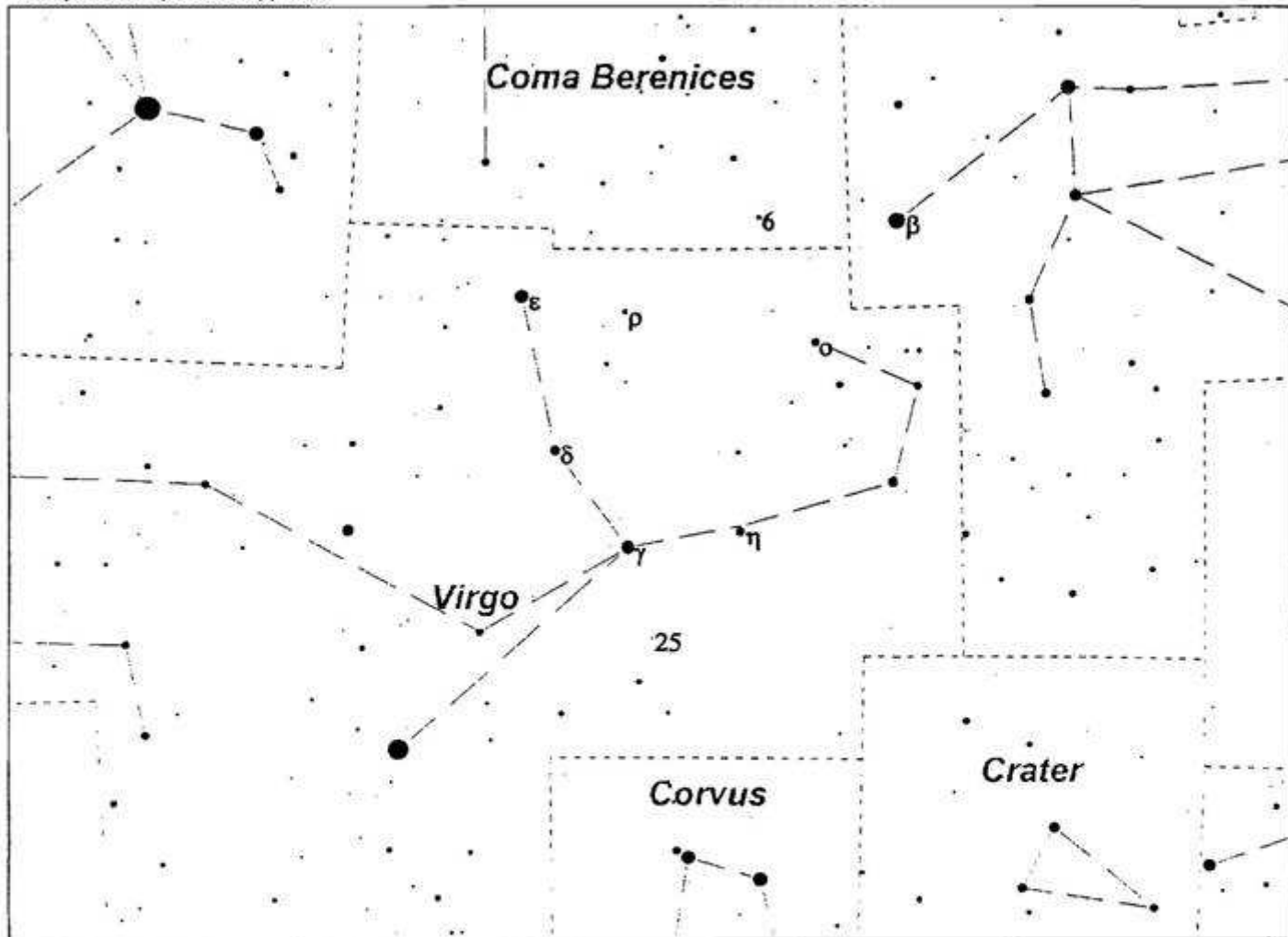
\*I prefer  $\epsilon$ Vir (moving west) as a jumping-off point to the next 25 targets, as they all reside in roughly the same 10 sq. degrees of space. A more conventional west-east search can begin at  $\eta$ Vir, working your way backwards through the list from ngc4030\*

ngc4866  
GX MAG 11.0  
RA 12 59.4 DEC 14 10  
SA2000 14 URAN 194

from  $\epsilon$  VIR go .7° W and 3.2° N to ngc4866

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



## VIRGO (continued)

ngc4762  
GX MAG 10.0  
RA 12 53.0 DEC 11 14  
SA2000 14 URAN 194

from ngc4866 go  $1.6^\circ$  W and  $2.9^\circ$  S to ngc4762  
OR  
from  $\epsilon$  VIR go  $.3^\circ$  N and  $2.3^\circ$  W to ngc4762

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4754  
GX MAG 10.5  
RA 12 52.4 DEC 11 19  
SA2000 14 URAN 194

ngc4754 lies  $.2^\circ$  NW of ngc4762

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4698  
GX MAG 11.0  
RA 12 48.5 DEC 8 30  
SA2000 14 URAN 194

from ngc4754 go  $.9^\circ$  W and  $2.8^\circ$  S to ngc4698

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4596  
GX MAG 10.5  
RA 12 40.0 DEC 10 11  
SA2000 14 URAN 194

from ngc4698 go  $1.6^\circ$  W and  $1.7^\circ$  N to  $\rho$  VIR  
then  
from  $\rho$  VIR go  $.05^\circ$  S and  $.5^\circ$  W to ngc4596  
(make observation and recenter  $\rho$  VIR)

date \_\_\_\_\_ site \_\_\_\_\_

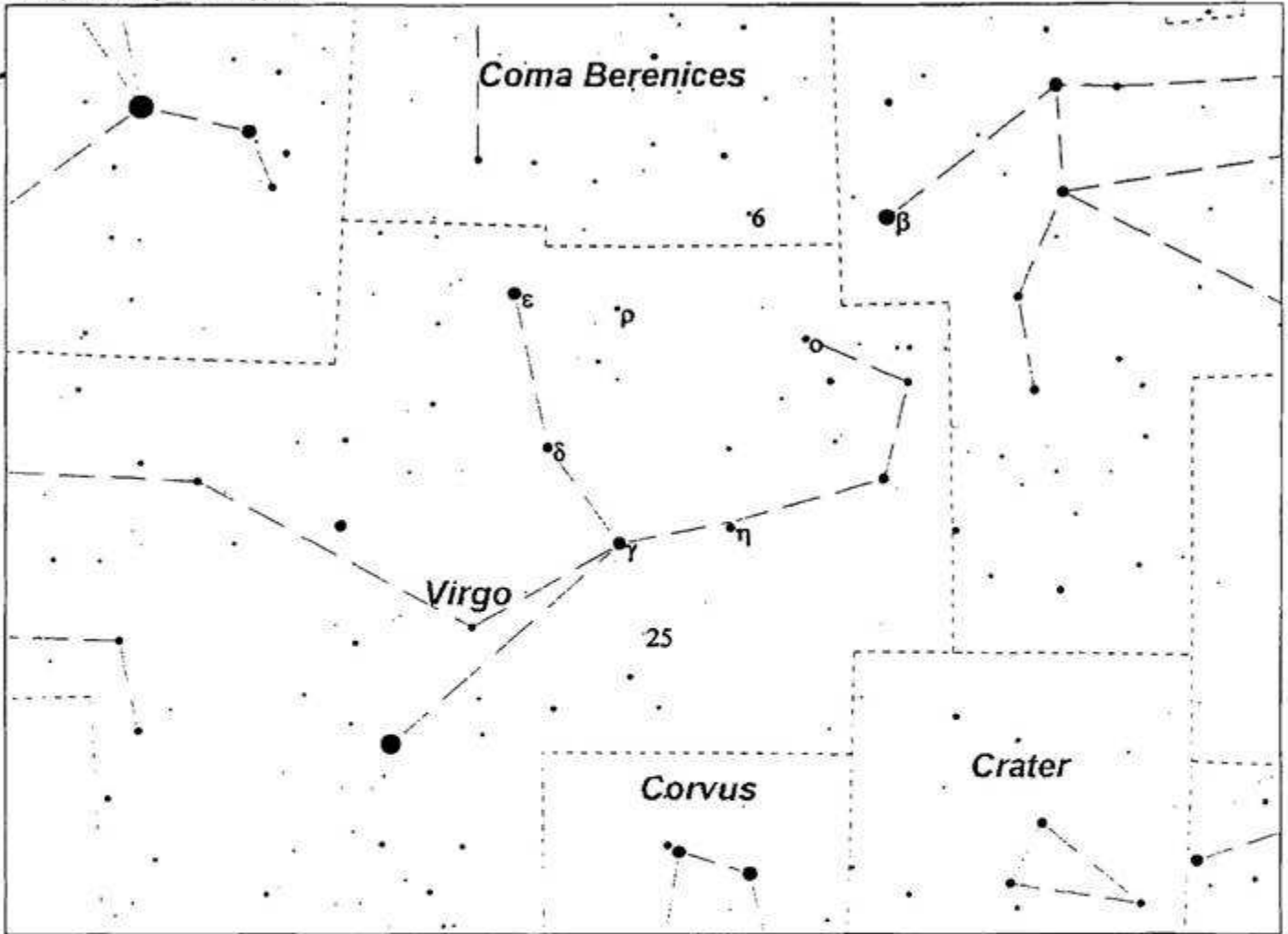
notes \_\_\_\_\_

ngc4660  
GX MAG 11.0  
RA 12 44.6 DEC 11 12  
SA2000 14 URAN 194

from  $\rho$  VIR go  $.6^\circ$  E and  $1.0^\circ$  N to ngc4660

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



**VIRGO** (continued)

ngc4654  
GX MAG 10.5  
RA 12 44.0 DEC 13 08  
SA2000 14 URAN 194

from ngc4660 go .1° W and 1.9° N to ngc4654

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4550  
GX MAG 11.5  
RA 12 35.6 DEC 12 14  
SA2000 14 URAN 194

from ngc4654 go 1.7° W to m90  
then  
from m90 go .3° W and 1.0° S to ngc4550

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4478  
GX MAG 11.0  
RA 12 30.4 DEC 12 20  
SA2000 14 URAN 194

from ngc4550 go .2° N and 1.2° W to m87  
ngc4478 lies .2° SW of m87

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4438  
GX MAG 10.0  
RA 12 27.8 DEC 13 01  
SA2000 14 URAN 193

from ngc4478 go .6° W and .7° N to ngc4438

date \_\_\_\_\_ site \_\_\_\_\_

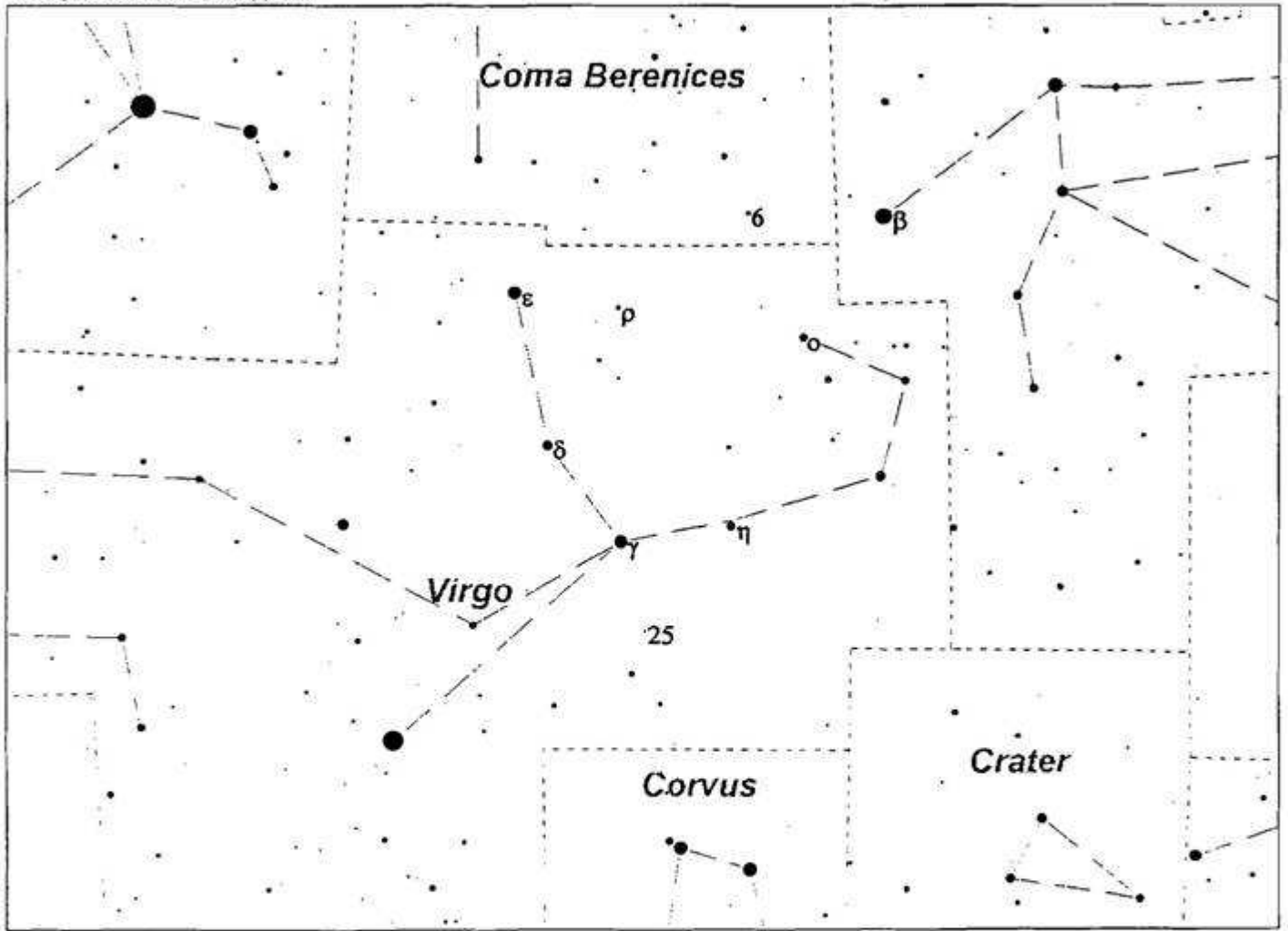
notes \_\_\_\_\_

ngc4435  
GX MAG 11.0  
RA 12 27.7 DEC 13 05  
SA2000 14 URAN 193

ngc4435 lies .1° NW of ngc4438

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_





## VIRGO (continued)

ngc4216  
GX MAG 10.0  
RA 12 15.9 DEC 13 09  
SA2000 14 URAN 193

from ngc4435 go .1° N and 2.9° W to ngc4216  
OR  
from β LEO go .3° N and 6.6° E to star 6 COM  
then  
from star 6 COM go 1.7° S to ngc4216

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4371  
GX MAG 11.0  
RA 12 25.0 DEC 11 43  
SA2000 14 URAN 193

from ngc4216 go .3° S and 2.2° E to m84  
then  
from m84 go 1.2° S to ngc4371

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4429  
GX MAG 10.0  
RA 12 27.5 DEC 11 07  
SA2000 14 URAN 193

from ngc4371 go .6° E and .6° S to ngc4429

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4442  
GX MAG 10.5  
RA 12 28.1 DEC 9 49  
SA2000 14 URAN 193

from ngc4429 go .2° E and 1.3° S to ngc4442

date \_\_\_\_\_ site \_\_\_\_\_

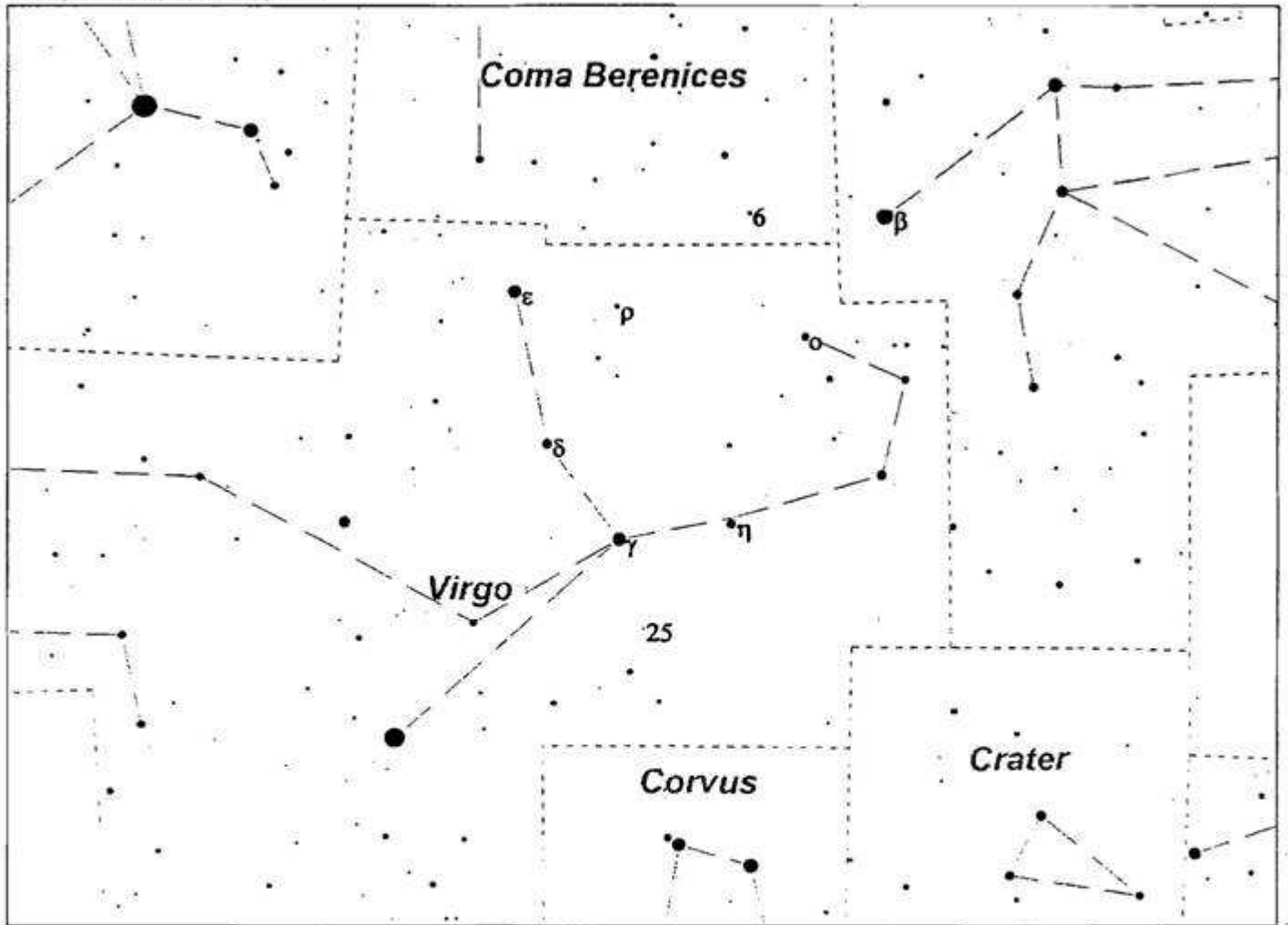
notes \_\_\_\_\_

ngc4535  
GX MAG 10.0  
RA 12 34.4 DEC 8 13  
SA2000 14 URAN 193

from ngc4442 go 1.5° E and 1.6° S to ngc4535

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



**VIRGO** (continued)

ngc4526  
GX MAG 9.5  
RA 12 34.1 DEC 7 43  
SA2000 14 URAN 193

from ngc4535 go .1° W and .5° S to ngc4526

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4570  
GX MAG 11.0  
RA 12 36.9 DEC 7 15  
SA2000 14 URAN 193/194

from ngc4526 go .4° S and .7° E to ngc4570

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4365  
GX MAG 11.0  
RA 12 24.5 DEC 7 20  
SA2000 14 URAN 193

from ngc4570 go .1° N and 3.1° W to ngc4365  
OR  
from o VIR go 1.4° S and 4.8° E to ngc4365

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4261  
GX MAG 10.5  
RA 12 19.4 DEC 5 50  
SA2000 14 URAN 193

from ngc4365 go 1.3° W and 1.5° S to ngc4261

date \_\_\_\_\_ site \_\_\_\_\_

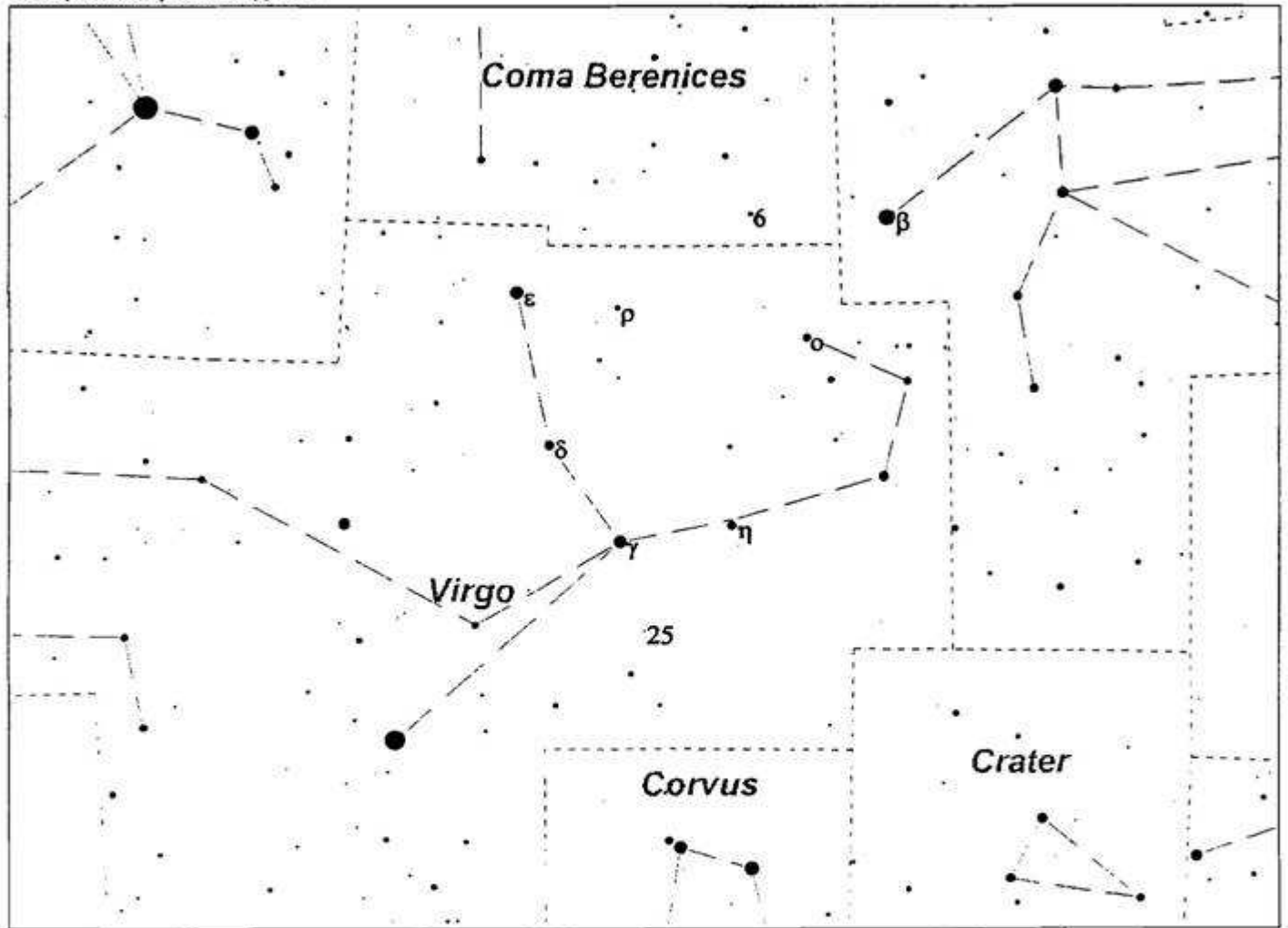
notes \_\_\_\_\_

ngc4281  
GX MAG 11.5  
RA 12 20.4 DEC 5 24  
SA2000 14 URAN 193

from ngc4261 go .3° E and .4° S to ngc4281

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



## VIRGO (continued)

ngc4273  
GX MAG 12.0  
RA 12 20.0 DEC 5 21  
SA2000 14 URAN 193

from ngc4281 go .05° S and .1° W to ngc4273

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4303 (m61)  
GX MAG 9.5  
RA 12 22.0 DEC 4 29  
SA2000 14 URAN 238

from ngc4273 go .5° E and .9° S to ngc4303

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4179  
GX MAG 11.0  
RA 12 12.9 DEC 1 19  
SA2000 14 URAN 238

from ngc4303 go 2.2° W and 3.2° S to ngc4179

OR

from η VIR go 1.7° W and 1.9° N to ngc4179

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4030  
GX MAG 11.5  
RA 12 00.4 DEC -1 05  
SA2000 14 URAN 238

from ngc4179 go 2.4° S and 3.1° W to ngc4030

OR

from η VIR go .4° S and 4.8° W to ngc4030

date \_\_\_\_\_ site \_\_\_\_\_

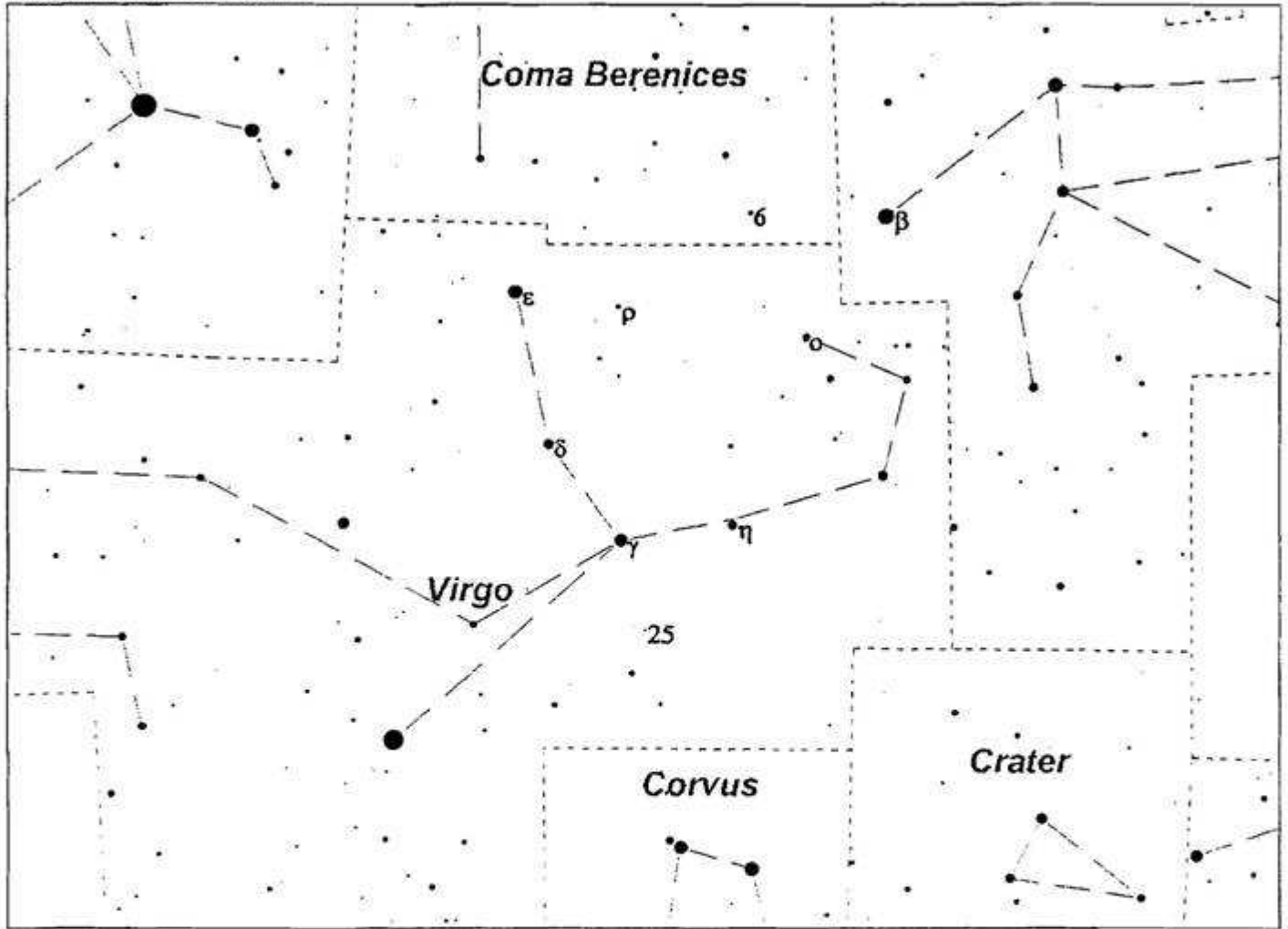
notes \_\_\_\_\_

ngc4665  
GX MAG 11.5  
RA 12 45.2 DEC 3 04  
SA2000 14 URAN 239

from δ VIR go .3° S and 2.6° W to ngc4665

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



## VIRGO (continued)

ngc4636  
GX MAG 9.5  
RA 12 42.9 DEC 2 42  
SA2000 14 URAN 239

from ngc4665 go .4° S and .6° W to ngc4636

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4643  
GX MAG 10.5  
RA 12 43.4 DEC 1 59  
SA2000 14 URAN 239

from ngc4636 go .1° E and .7° S to ngc4643

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4536  
GX MAG 10.5  
RA 12 34.5 DEC 2 12  
SA2000 14 URAN 239

from ngc4643 go .2° N and 2.2° W to ngc4536

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4527  
GX MAG 10.5  
RA 12 34.2 DEC 2 40  
SA2000 14 URAN 239

from ngc4536 go .1° W and .5° N to ngc4527

date \_\_\_\_\_ site \_\_\_\_\_

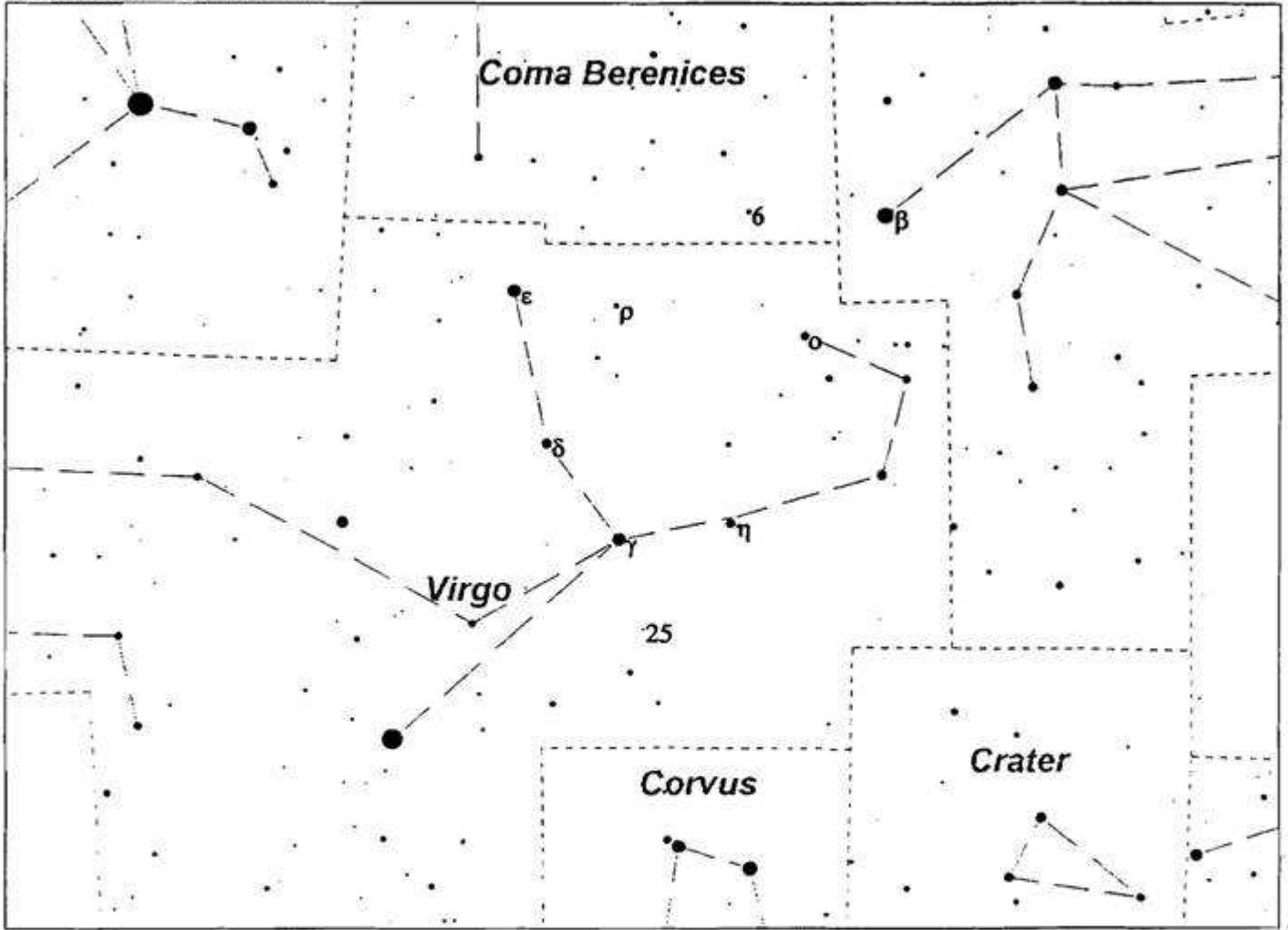
notes \_\_\_\_\_

ngc4900  
GX MAG 11.5  
RA 13 00.7 DEC 2 30  
SA2000 14 URAN 239

from  $\delta$  VIR go .9° S and 1.2° E to ngc4900

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_





## VIRGO (continued)

ngc4845  
GX MAG 12.0  
RA 12 58.1 DEC 1 35  
SA2000 14 URAN 239

from ngc4900 go .6° W and .9° S to ngc4845

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4666  
GX MAG 11.0  
RA 12 45.2 DEC -0 27  
SA2000 14 URAN 239

from  $\gamma$  VIR go .8° E and 1.0° N to ngc4666

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4753  
GX MAG 10.0  
RA 12 52.4 DEC -1 12  
SA2000 14 URAN 239

from ngc4666 go .7° S and 1.8° E to ngc4753

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc4546  
GX MAG 10.5  
RA 12 35.5 DEC -3 47  
SA2000 14 URAN 239

from ngc4753 go .3° S and 2.7° W to  $\gamma$  VIR  
then  
from  $\gamma$  VIR go 1.6° W and 2.4° S to ngc4546

date \_\_\_\_\_ site \_\_\_\_\_

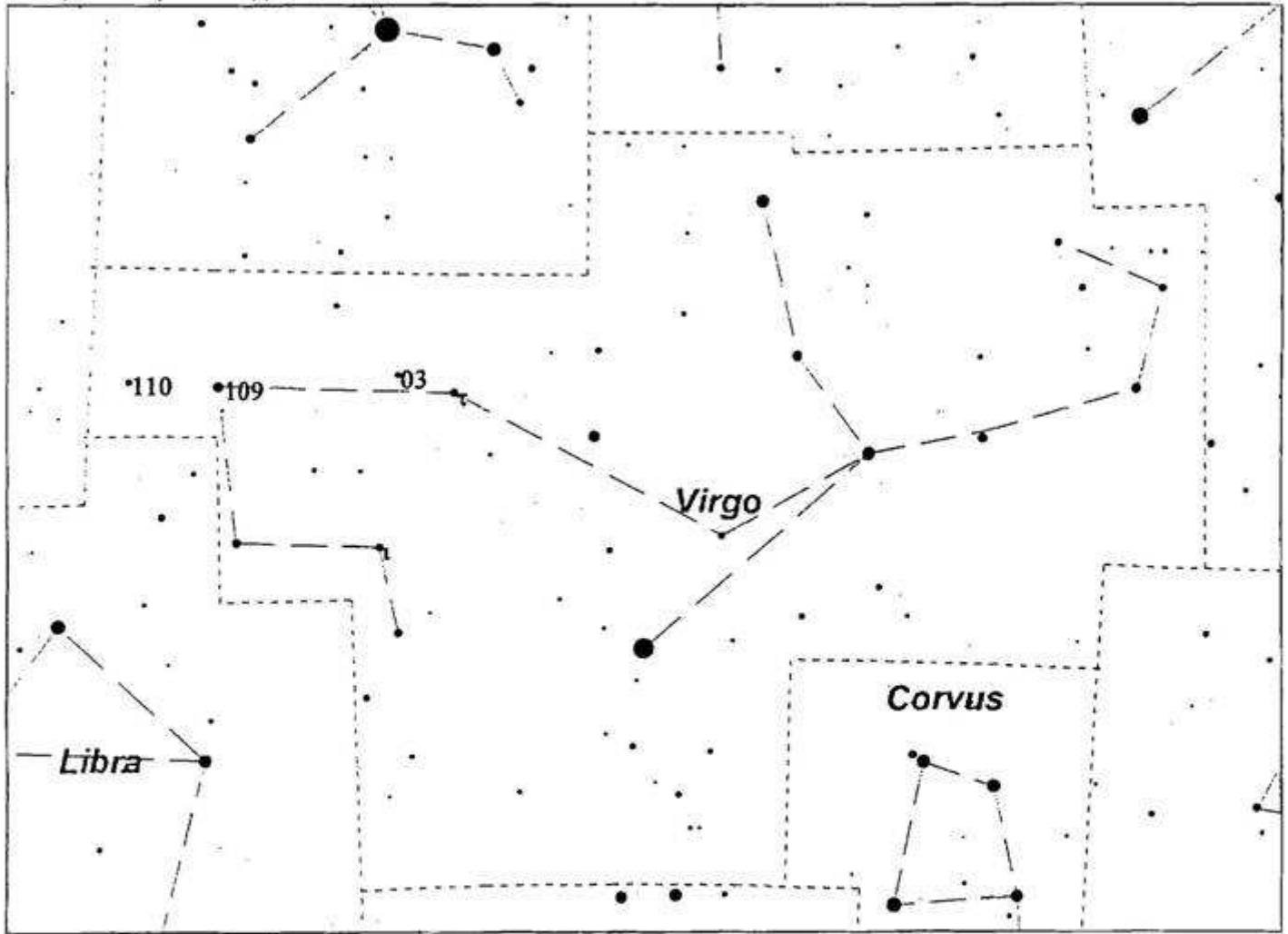
notes \_\_\_\_\_

ngc4697  
GX MAG 9.5  
RA 12 48.6 DEC -5 48  
SA2000 14 URAN 239

from ngc4546 go .3° E and 2.0° S to star 25 VIR  
then  
from star 25 VIR go 2.9° E to ngc4697

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



# VIRGO (continued)

## EASTERN VIRGO

ngc5634  
GC MAG 9.5  
RA 14 29.6 DEC -5 59  
SA2000 14 URAN 242

from  $\tau$  VIR go  $3.4^\circ$  E to ngc5634

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc5364  
GX MAG 10.5  
RA 13 56.3 DEC 5 02  
SA2000 14 URAN 241

from  $\tau$  VIR go  $1.3^\circ$  W and  $3.5^\circ$  N to ngc5364

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc5363  
GX MAG 10.0  
RA 13 56.2 DEC 5 16  
SA2000 14 URAN 241

ngc5363 lies  $.2^\circ$  N of ngc5364  
\*sug target 5248 Boo\*

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc5566  
GX MAG 10.5  
RA 14 20.4 DEC 3 56  
SA2000 14 URAN 241/242

from ngc5363 go  $1.3^\circ$  S and  $6.0^\circ$  E to ngc5566

OR

from  $\tau$  VIR go  $.9^\circ$  N and  $2.6^\circ$  E to star marked '03'

then

from star marked '03' go  $1.5^\circ$  N and  $2.0^\circ$  E to ngc5566

date \_\_\_\_\_ site \_\_\_\_\_

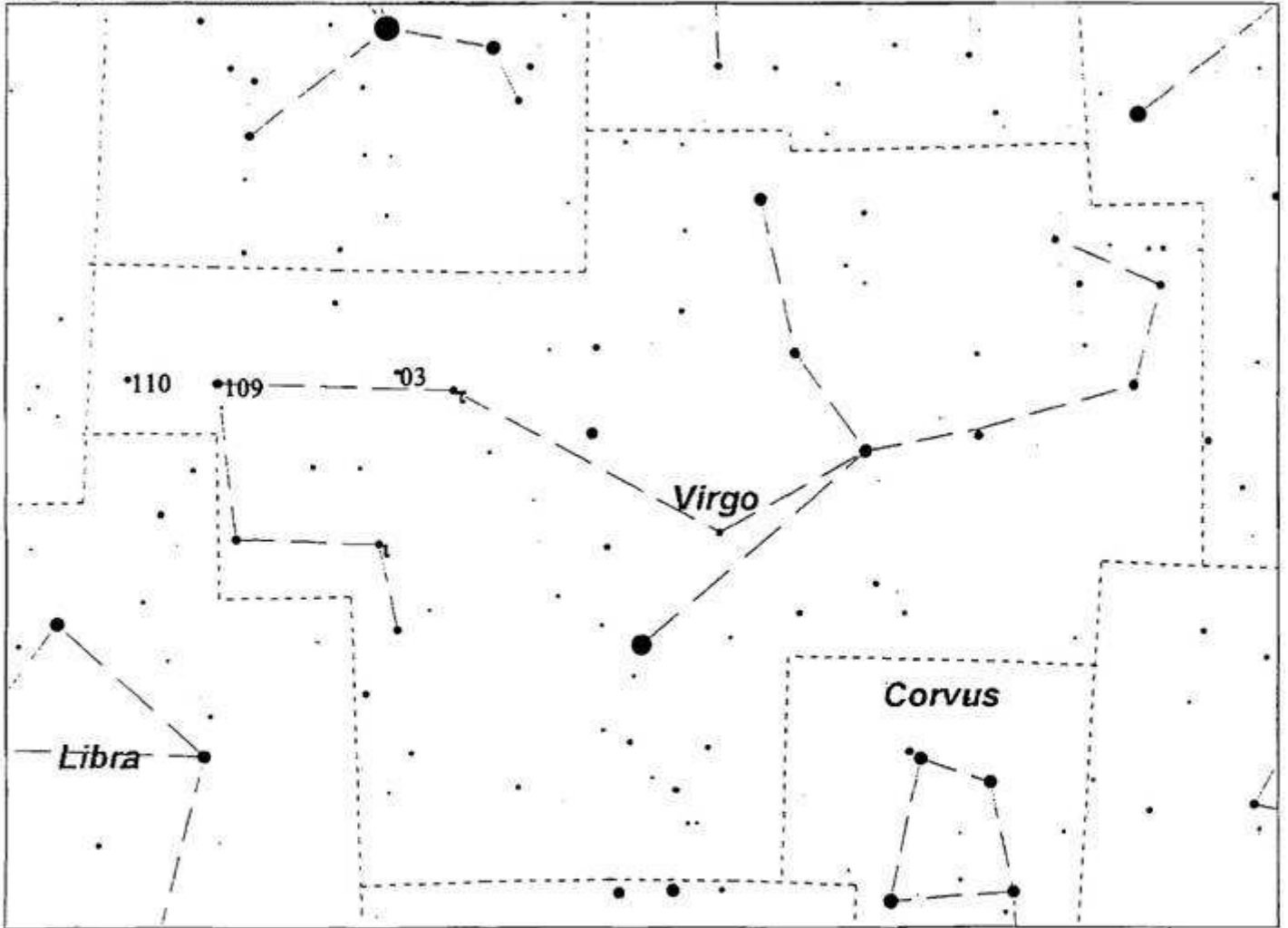
notes \_\_\_\_\_

ngc5576  
GX MAG 11.0  
RA 14 21.1 DEC 3 16  
SA2000 14 URAN 242

from ngc5566 go  $.2^\circ$  E and  $.7^\circ$  S to ngc5576

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



## VIRGO (continued)

ngc5746  
GX MAG 10.5  
RA 14 45.0 DEC 1 49  
SA2000 14 URAN 243

from star 109 VIR go .1° N and .3° W to ngc5746  
(make observation and recenter star 109)

date \_\_\_\_\_ site \_\_\_\_\_

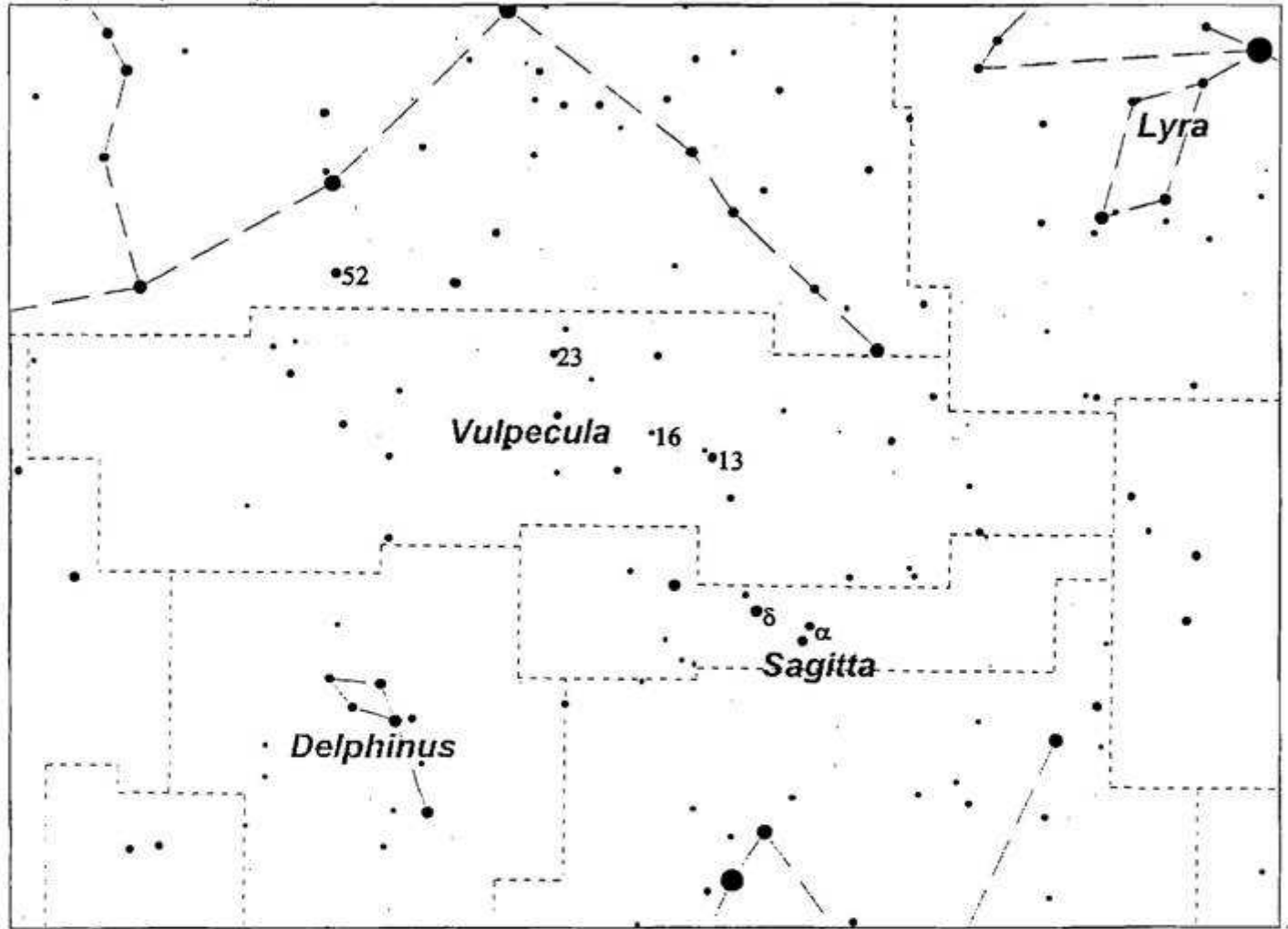
notes \_\_\_\_\_

ngc5846  
GX MAG 10.0  
RA 15 06.5 DEC 1 36  
SA2000 14 URAN 243

from star 109 VIR go .2° N and 4.2° E to star 110 VIR  
then  
from star 110 VIR go .5° S and .8° E to ngc5846  
\*sug target 5897 Lib\*

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_



# VULPECULA

ngc6802  
OC MAG 9.5  
RA 19 30.6 DEC 20 16  
SA2000 8 URAN 162

from  $\alpha$  SGE go 2.2° N and 2.3° W to ngc6802  
located off the eastern edge of The Coathanger (Cr399)

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc6823  
C/N MAG 7.5  
RA 19 43.1 DEC 23 18  
SA2000 8 URAN 162

from ngc6802 go 2.9° E and 3.0° N to ngc6823  
OR  
from  $\delta$  SGE go 1.0° W and 4.7° N to ngc6823

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc6830  
OC MAG 8.0  
RA 19 51.0 DEC 23 04  
SA2000 8 URAN 162

from ngc6823 go .2° S and 1.8° E to ngc6830

date \_\_\_\_\_ site \_\_\_\_\_

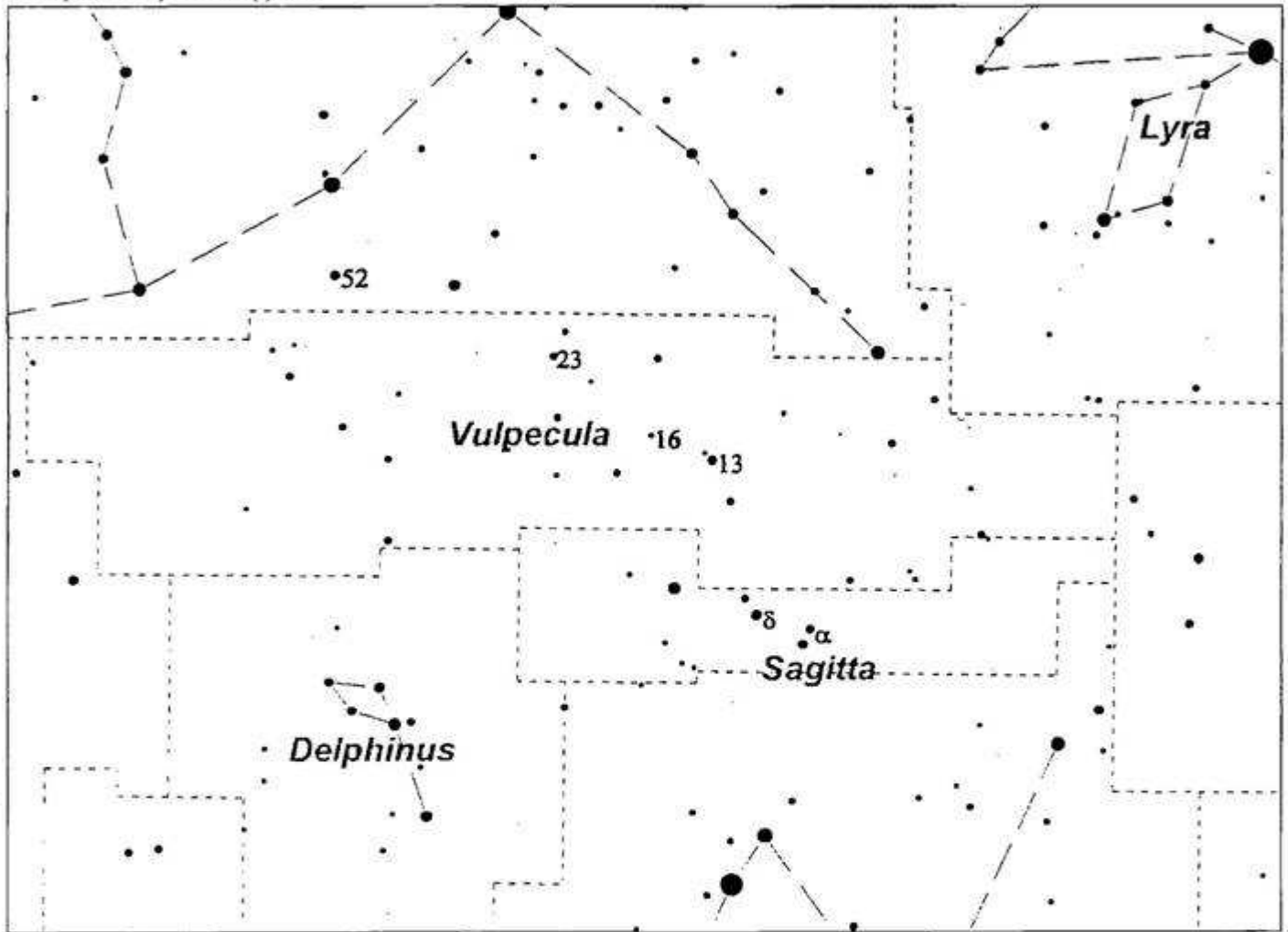
notes \_\_\_\_\_

ngc6882  
OC MAG 6.5  
RA 20 11.7 DEC 26 33  
SA2000 8 URAN 162/163

from ngc6830 go .6° E and 1.0° N to star 13 VUL  
then  
from star 13 VUL go .8° N and 1.9° E to star 16 VUL  
then  
from star 16 VUL go 1.6° N and 2.2° E to ngc6882

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_





# VULPECULA (continued)

ngc6885

OC MAG 7.5

RA 20 12.0 DEC 26 29

SA2000 8 URAN 163

ngc6885 lies in the SE section of ngc6882

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

ngc6940

OC MAG 6.5

RA 20 34.6 DEC 28 18

SA2000 9 URAN 163

from ngc6885 go .9° E and 1.3° N to star 23 VUL

then

from star 23 VUL go .5° N and 4.1° E to ngc6940

OR

from star 52 CYG go 2.4° S and 2.4° W to ngc6940

date \_\_\_\_\_ site \_\_\_\_\_

notes \_\_\_\_\_

\*DELPHINUS SEARCH SEQUENCE BEGINS AT  $\gamma$  SGE\*

\*LACERTA SEARCH SEQUENCE BEGINS AT  $\rho$  CYG\*

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