



Discover the deepsky for yourself

Discover!

An observing project of the ASSA Deepsky Section

Discover the southern constellations

This workbook is ideal for learning all the constellations visible from the southern hemisphere, and for discovering the brighter deepsky objects on your own.

Chart 1 shows the constellations around the south pole. Use the brightest stars – Pointers, Crux, Canopus and Achernar – to orient the chart properly. Charts 2 to 6 show the regions immediately surrounding Chart 1. Chart 7 shows the brighter stars around Orion, a prominent summer constellation. Charts 8 to 13 show the regions surrounding Orion. The remainder of the charts covers the rest of the sky, with generous overlap between charts for easy use. Along the borders of each chart appears the map number of neighbouring charts. For each constellation, a pronunciation guide is given, as well as the English name, genitive and abbreviation. You may want to make photocopies of the star charts, as you will be writing on them, plotting in any objects you discover as you go along.

Take a moment to examine the tables on this page. The table at the bottom of the page lists the charts visible at 21:00 for mid-month, for each month of the year. The adjacent table lists those constellations that are directly overhead at 21:00 and 02:00 at the beginning of each month.

To use this workbook, you will also need a clipboard, pencil, eraser and a very dim, red-shielded torch – you don't want to compromise your night vision. Observe from the darkest skies you can safely reach, avoiding bright lights at all costs. Give your eyes sufficient time to dark adapt (about 30 minutes) before starting to observe.

While using the charts in this workbook to find your way around the sky as you learn the constellations, you may notice some interesting non-stellar objects. From a dark (rural) observing site, several deepsky objects can be seen with the naked eye. From brighter (sub-urban) skies, many are visible in binoculars. While working with a particular chart, **study the sky carefully and mark any non-stellar object you come across on the chart.** Make a note of your discovery, describing each object in as much detail as you can (see the last two pages for guidelines).

Binocular observers already familiar with the constellations can use these maps to **seek out any non-stellar objects hidden amongst the stars** on the maps. Plot all discoveries, number them, and provide descriptions and sketches. A separate record sheet is provided to note the colours of the brighter stars. Once a map has been thoroughly examined, send your annotated star charts and observing notes to the ASSA Deep-Sky Section Director (via post to Auke Slotegraaf, 14 Mount Grace, Somerset Ridge, Somerset West, 7130; or as a digitised version via e-mail to [auke@psychohistorian.org]). Your observations will be returned along with detailed feedback.

Happy hunting!



Contents of the charts

Chart	Visibility (21:00)	Constellations
01	Jan – Dec	Apus, Carina, Chamaeleon, Crux, Dorado, Hydrus, Mensa, Musca, Octans, Pavo, Reticulum, Triangulum Australe, Tucana, Volans
02	Feb – Sep	Centaurus, Circinus, Crux, Musca, Triangulum Australe
03	Mar – Sep	Ara, Circinus, Lupus, Norma, Triangulum Australe
04	Nov – May	Antlia, Carina, Pictor, Puppis, Pyxis, Vela, Volans
05	Oct – Apr	Caelum, Dorado, Horologium, Pictor, Reticulum
06	Jul – Jan	Grus, Indus, Microscopium, Pavo, Phoenix, Piscis Austrinus, Tucana
07	Dec – Mah	Auriga, Canis Major, Canis Minor, Columba, Gemini, Lepus, Orion, Perseus, Taurus
08	Nov – Apr	Orion
09	Nov – Apr	Canis Major, Columba, Lepus
10	Nov – Feb	Taurus
11	Dec – Jan	Auriga, Perseus
12	Nov – Mar	Eridanus
13	Jan – Apr	Canis Minor, Gemini, Monoceros
14	Jan – Apr	Cancer, Lynx
15	Mar – Jun	Coma Berenices, Leo, Leo Minor
16	Feb – May	Hydra, Sextans
17	Feb – Jul	Corvus, Crater, Hydra
18	Apr – Jul	Virgo
19	May – Jul	Boötes, Corona Borealis
20	Jul – Sep	Hercules, Ophiuchus, Serpens
21	May – Oct	Corona Australis, Libra, Sagittarius, Scorpius, Scutum, Telescopium
22	Aug – Oct	Aquila, Cygnus, Delphinus, Equuleus, Lyra, Sagitta, Scutum, Vulpecula
23	Aug – Nov	Aquarius, Capricornus, Piscis Austrinus
24	Oct – Dec	Andromeda, Aries, Pegasus, Pisces, Triangulum
25	Oct – Feb	Cetus, Fornax, Sculptor

Which charts to use

Month	Charts that can be used (mid-month at 21:00)
Jan	1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 25
Feb	1, 2, 4, 5, 7, 8, 9, 10, 12, 13, 14, 16, 17, 25
Mar	1, 2, 3, 4, 5, 7, 8, 9, 12, 13, 14, 15, 16, 17
Apr	1, 2, 3, 4, 5, 8, 9, 13, 14, 15, 16, 17, 18
May	1, 2, 3, 4, 15, 16, 17, 18, 19, 21
Jun	1, 2, 3, 15, 17, 18, 19, 21
Jul	1, 2, 3, 6, 17, 18, 19, 20, 21
Aug	1, 2, 3, 6, 20, 21, 22, 23
Sep	1, 2, 3, 6, 20, 21, 22, 23
Oct	1, 5, 6, 21, 22, 23, 24, 25
Nov	1, 4, 5, 6, 8, 9, 10, 12, 23, 24, 25
Dec	1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 24, 25

Constellations overhead at 21:00 and 02:00

Month	Overhead at 21:00	Overhead at 02:00
Jan	Cae, Eri, For, Hor, Phe, Ret, Scl	Ant, Car, CMa, Col, Pic, Pup, Pyx, Vel
Feb	Cae, CMa, Col, Dor, Hor, Lep, Pic, Ret	Ant, Crt, Hya, Pyx, Sex, Vel
Mar	Cae, Car, CMa, Col, Lep, Pic, Pup, Pyx	Ant, Cen, Crt, Cru, Crv, Hya
Apr	Ant, Car, Hya, Pup, Pyx, Vel	Cen, Cru, Crv, Hya, Lib, Lup, Nor
May	Ant, Cen, Crt, Crv, Hya, Pyx, Vel	Ara, Lib, Lup, Nor, Sco
Jun	Cen, Crt, Cru, Crv, Hya, Lup, Vir	Ara, CrA, Nor, Sco, Sct, Ser, Sgr, Tel
Jul	Cen, Lib, Lup, Nor, Sco	Cap, CrA, Mic, Sct, Sgr, Tel
Aug	Ara, CrA, Lib, Lup, Nor, Sco, Sgr, Tel	Aqr, Cap, Gru, Ind, Mic, PsA
Sep	Ara, Cap, CrA, Mic, Sco, Sct, Sgr, Tel	Aqr, Cet, Scl, Phe, Gru, PsA
Oct	Cap, CrA, Gru, Mic, PsA, Sgr, Tel	Cet, Eri, For, Hor, Phe, Scl
Nov	Aqr, Gru, Ind, Mic, Phe, PsA, Scl	Cae, Col, Eri, For, Hor, Lep, Pic, Ret
Dec	Cet, For, Gru, Phe, Scl	Cae, CMa, Col, Dor, Hor, Lep, Pic, Pup

Discover!

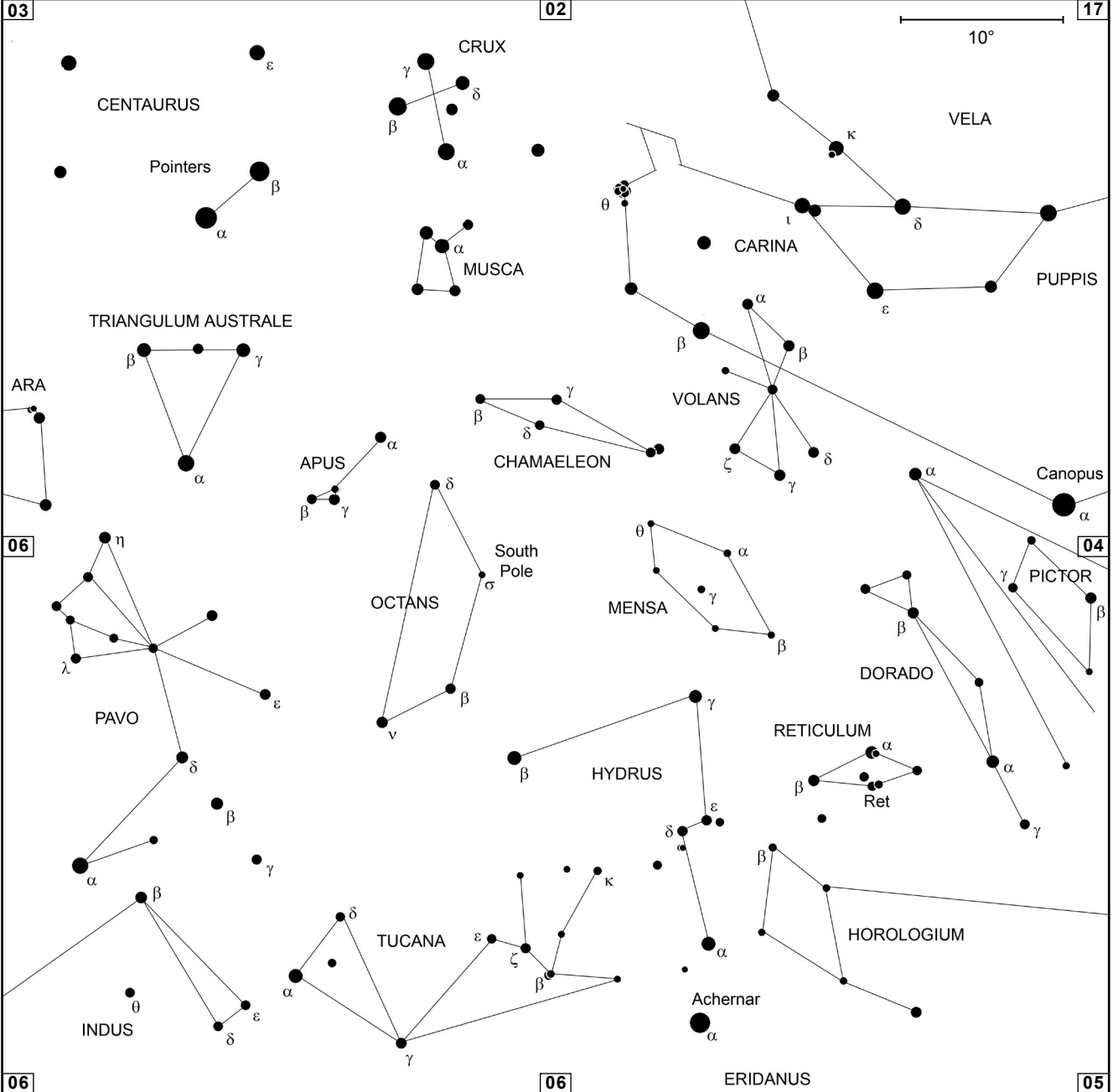
**chart
01**

- **Apus** [AY-pus], the Bird of Paradise. (Apodis, Aps)
- **Carina** [ka-RYE-nah], the Keel. (Carinae, Car)
- **Chamaeleon** [ka-MEE-lee-un]. (Chamaeleontis, Cha)
- **Crux** [KRUKS], the Southern Cross. (Crucis, Cru)
- **Dorado** [doh-RAH-doh], the Swordfish. (Doradus, Dor)
- **Hydrus** [HY-drus], the Small Water-Snake. (Hydri, Hyi)
- **Mensa** [MEN-sah], Table Mountain. (Mensae, Men)
- **Musca** [MUSS-kah], the Fly. (Muscae, Mus)

- **Octans** [OCK-tanz], the Octant. (Octantis, Oct)
- **Pavo** [PAH-voh], the Peacock. (Pavonis, Pav)
- **Reticulum** [reh-TIK-u-lum], the Reticule (Reticuli, Ret)
- **Triangulum Australe** [tri-ANG-gyu-lum os-TRAH-lee], the Southern Triangle. (Trianguli Australis, TrA)
- **Tucana** [too-KAN-ah], the Toucan. (Tucanae, Tuc)
- **Volans** [VOH-lanz], the Flying Fish. (Volantis, Vol)

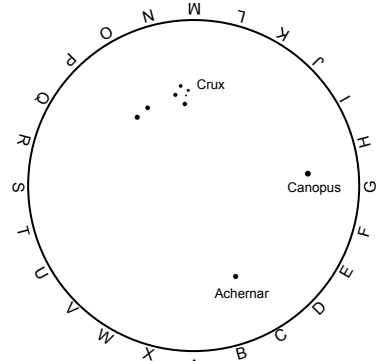
January – December

α alpha, β beta, γ gamma, δ delta, ε epsilon, ζ zeta, η eta, θ theta, ι iota, κ kappa, λ lambda, μ mu, ν nu, ξ xi, ο omicron, π pi, ρ rho, σ sigma, τ tau, υ upsilon, φ phi, χ chi, ψ psi, ω omega



Guide to orienting the chart
 Use the small star map on the right to help orient Chart 1. Start by finding the most appropriate date in the left-most column of the table on the right. In the top row, locate the time of observing. Note the letter found at the intersection. Now turn the star chart so that this letter is at the bottom.
 Then, stand so that you face South. (To find South, stand so that you are facing the direction where the Sun sets, i.e. west. South is then directly towards your left). The chart will now approximately match the position of Crux, the Pointers, Achernar and Canopus in the sky.
 Because of the Earth's motion around the Sun, the sky shifts by one letter each two weeks. Use this fact to interpolate between dates. For example, on January 15 at 21:00, "Q" should be at the bottom.

Date	18 ^h	19 ^h	20 ^h	21 ^h	22 ^h	23 ^h	00 ^h	01 ^h	02 ^h	03 ^h	04 ^h	05 ^h	06 ^h
Jan 1			O	P	Q	R	S	T	U	V	W		
Feb 1			Q	R	S	T	U	V	W	X	A		
Mar 1		R	S	T	U	V	W	X	A	B	C	D	
Apr 1	T	U	V	W	X	A	B	C	D	E	F		
May 1	U	V	W	X	A	B	C	D	E	F	G	H	I
Jun 1	W	X	A	B	C	D	E	F	G	H	I	J	K
Jul 1	A	B	C	D	E	F	G	H	I	J	K	L	M
Aug 1	C	D	E	F	G	H	I	J	K	L	M	N	O
Sep 1	F	G	H	I	J	K	L	M	N	O	P		
Oct 1	H	I	J	K	L	M	N	O	P	Q	R		
Nov 1		K	L	M	N	O	P	Q	R	S			
Dec 1		M	N	O	P	Q	R	S	T	U			



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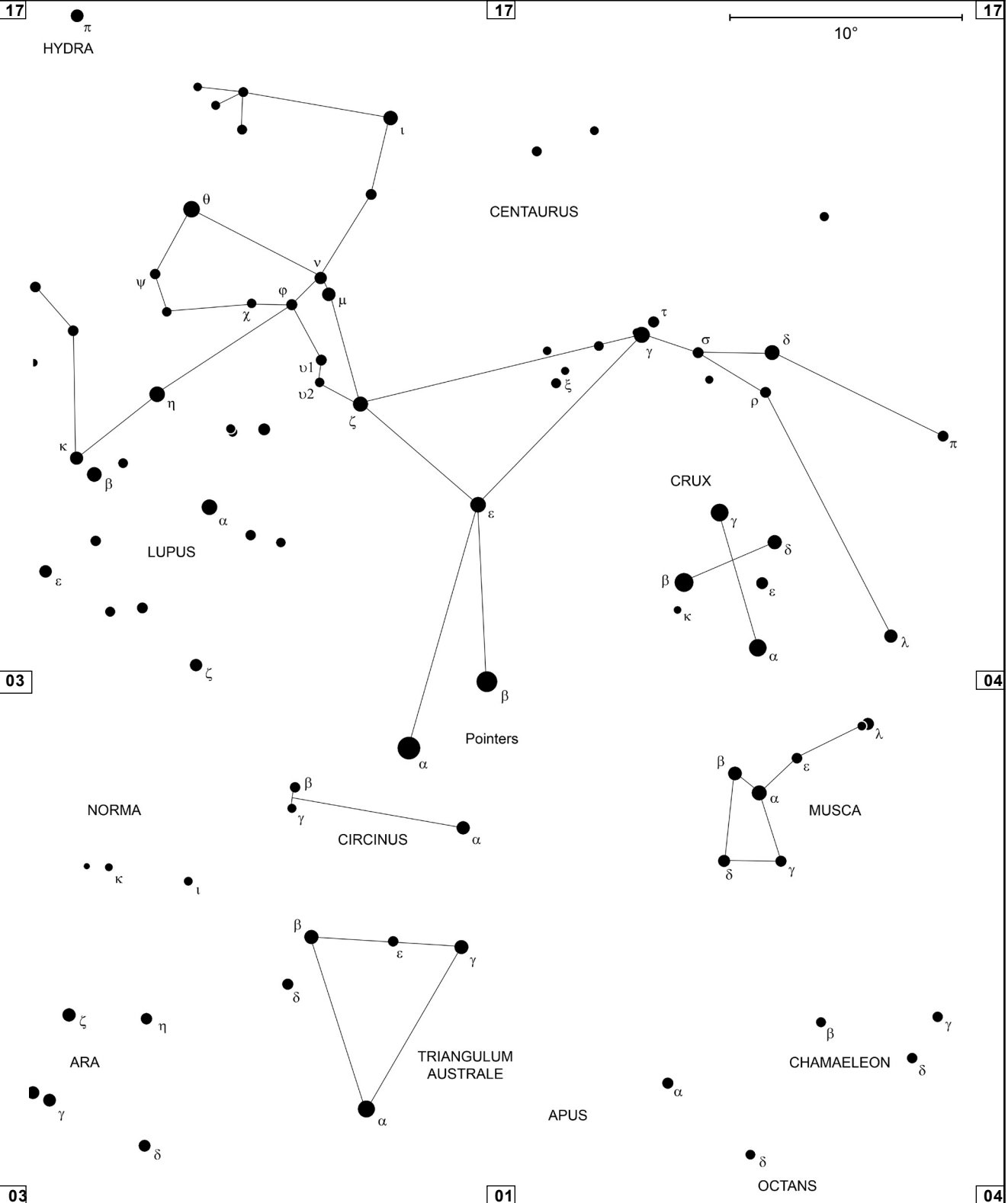
chart
02

- **Centaurus** [sen-TOR-us], the Centaur. (Centauri, Cen)
- **Circinus** [SUR-seh-nus], the Compasses. (Circini, Cir)
- **Crux** [KRUKS], the Southern Cross. (Crucis, Cru)
- **Musca** [MUSS-kah], the Fly. (Muscae, Mus)

- **Triangulum Australe** [tri-ANG-gyu-lum os-TRAH-lee], the Southern Triangle. (Trianguli Australis, TrA)

February – September

α alpha, β beta, γ gamma, δ delta, ε epsilon, ζ zeta, η eta, θ theta, ι iota, κ kappa, λ lambda, μ mu, ν nu, ξ xi, ο omicron, π pi, ρ rho, σ sigma, τ tau, υ upsilon, φ phi, χ chi, ψ psi, ω omega



Notes

Discover!

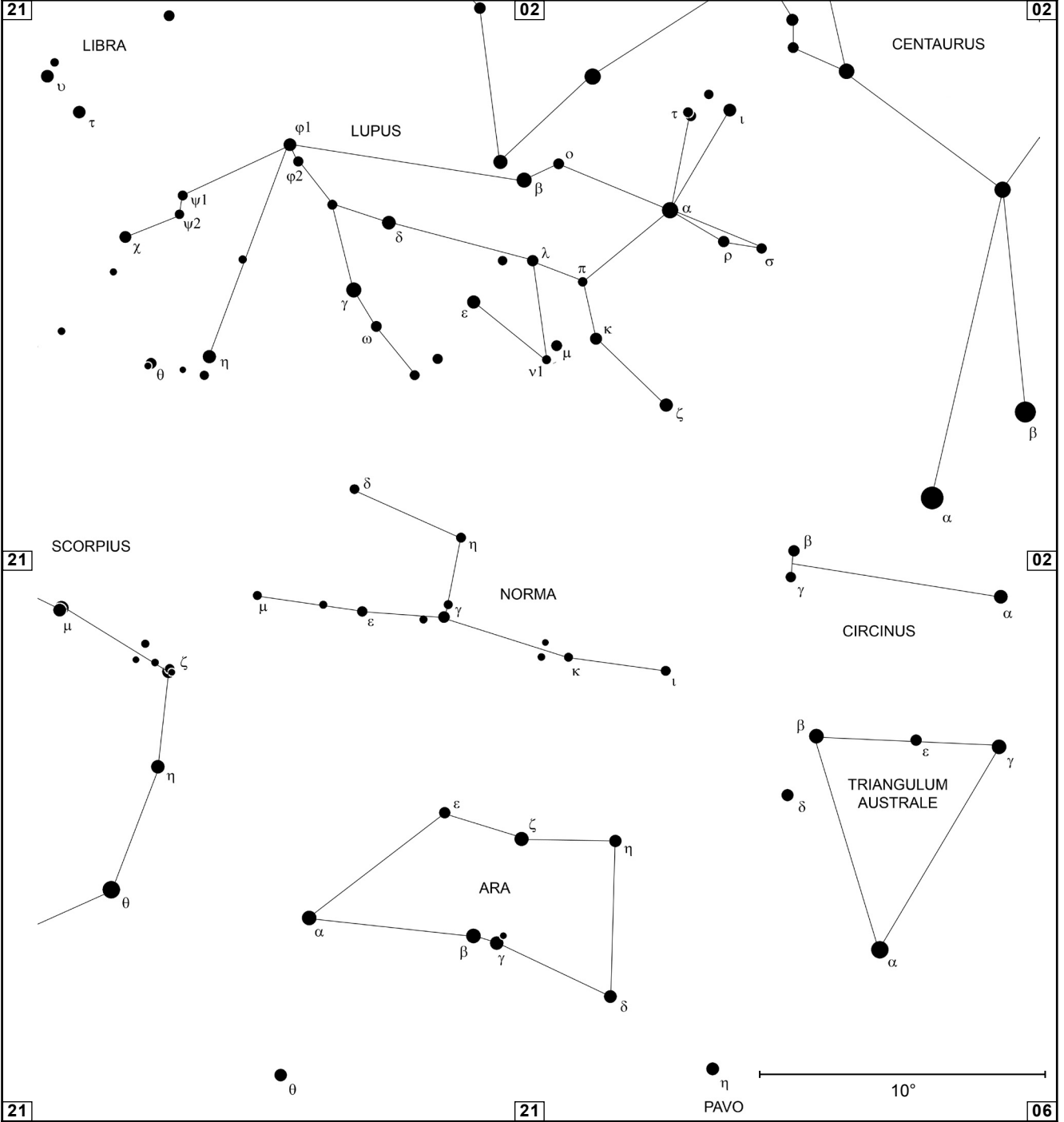
**chart
03**

- **Ara** [AR-uh], the Altar. (Arae, Ara)
- **Circinus** [SUR-seh-nus], the Compasses. (Circini, Cir)
- **Lupus** [LOO-pus], the Wolf. (Lupi, Lup)
- **Norma** [NOR-muh], the Level and Square. (Normae, Nor)

- **Triangulum Australe** [tri-ANG-gyu-lum os-TRAH-lee], the Southern Triangle. (Trianguli Australis, TrA)

March – September

α alpha, β beta, γ gamma, δ delta, ε epsilon, ζ zeta, η eta, θ theta, ι iota, κ kappa, λ lambda, μ mu, ν nu, ξ xi, ο omicron, π pi, ρ rho, σ sigma, τ tau, υ upsilon, φ phi, χ chi, ψ psi, ω omega



Notes

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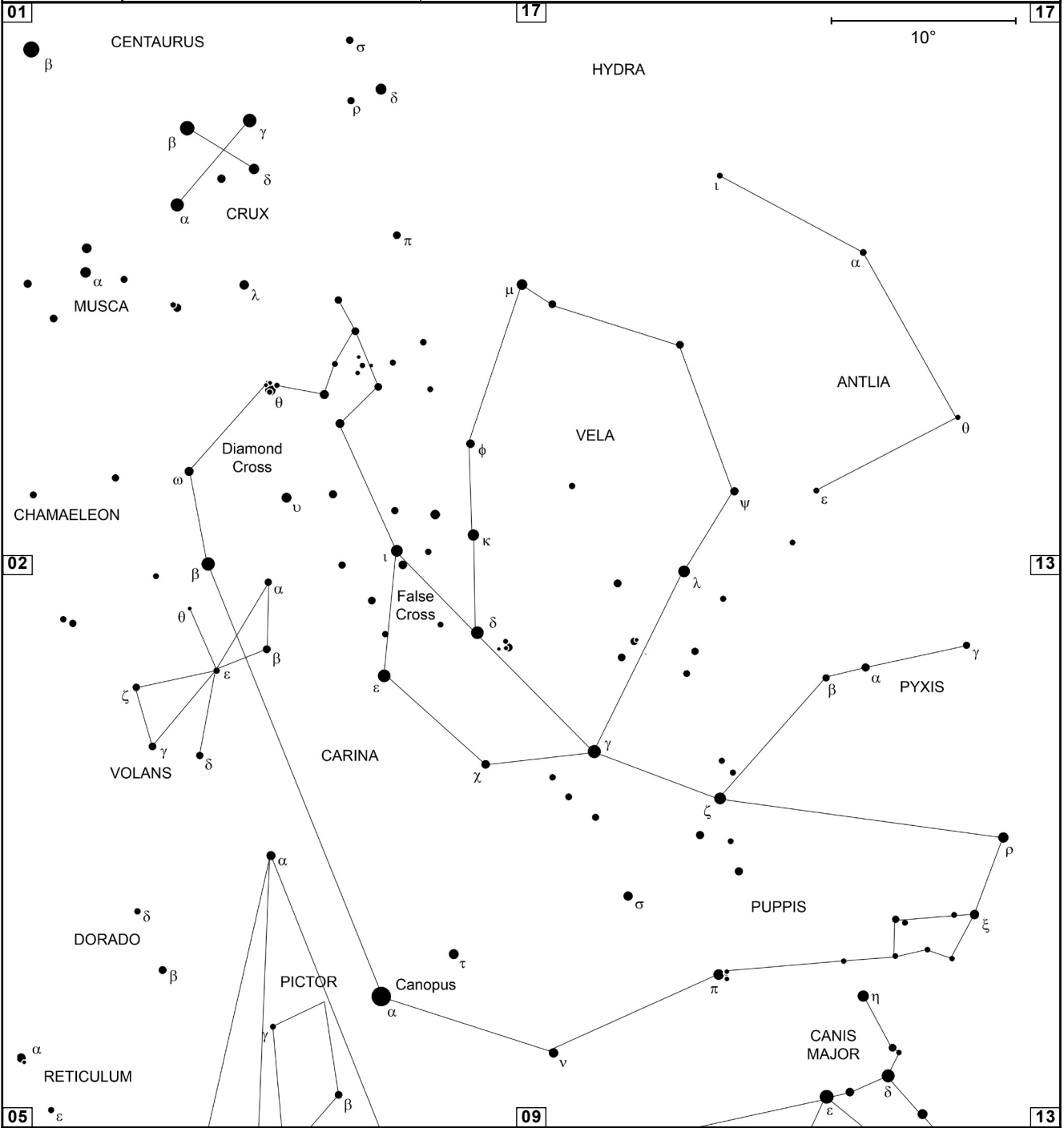
chart 04

- **Antlia** [ANT-lee-uh], the Air Pump. (Antliae, Ant)
- **Carina** [ka-RYE-nah], the Keel. (Carinae, Car)
- **Pictor** [PIK-tor], the Painter's Easel. (Pictoris, Pic)
- **Puppis** [PUP-iss], the Stern. (Puppis, Pup)

- **Pyxis** [PIK-sis], the Mariner's Compass. (Pyxidis, Pyx)
- **Vela** [VEE-lah], the Sails. (Velorum, Vel)
- **Volans** [VOH-lanz], the Flying Fish. (Volantis, Vol)

November – May

α alpha, β beta, γ gamma, δ delta, ε epsilon, ζ zeta, η eta, θ theta, ι iota, κ kappa, λ lambda, μ mu, ν nu, ξ xi, ο omicron, π pi, ρ rho, σ sigma, τ tau, υ upsilon, φ phi, χ chi, ψ psi, ω omega



Notes

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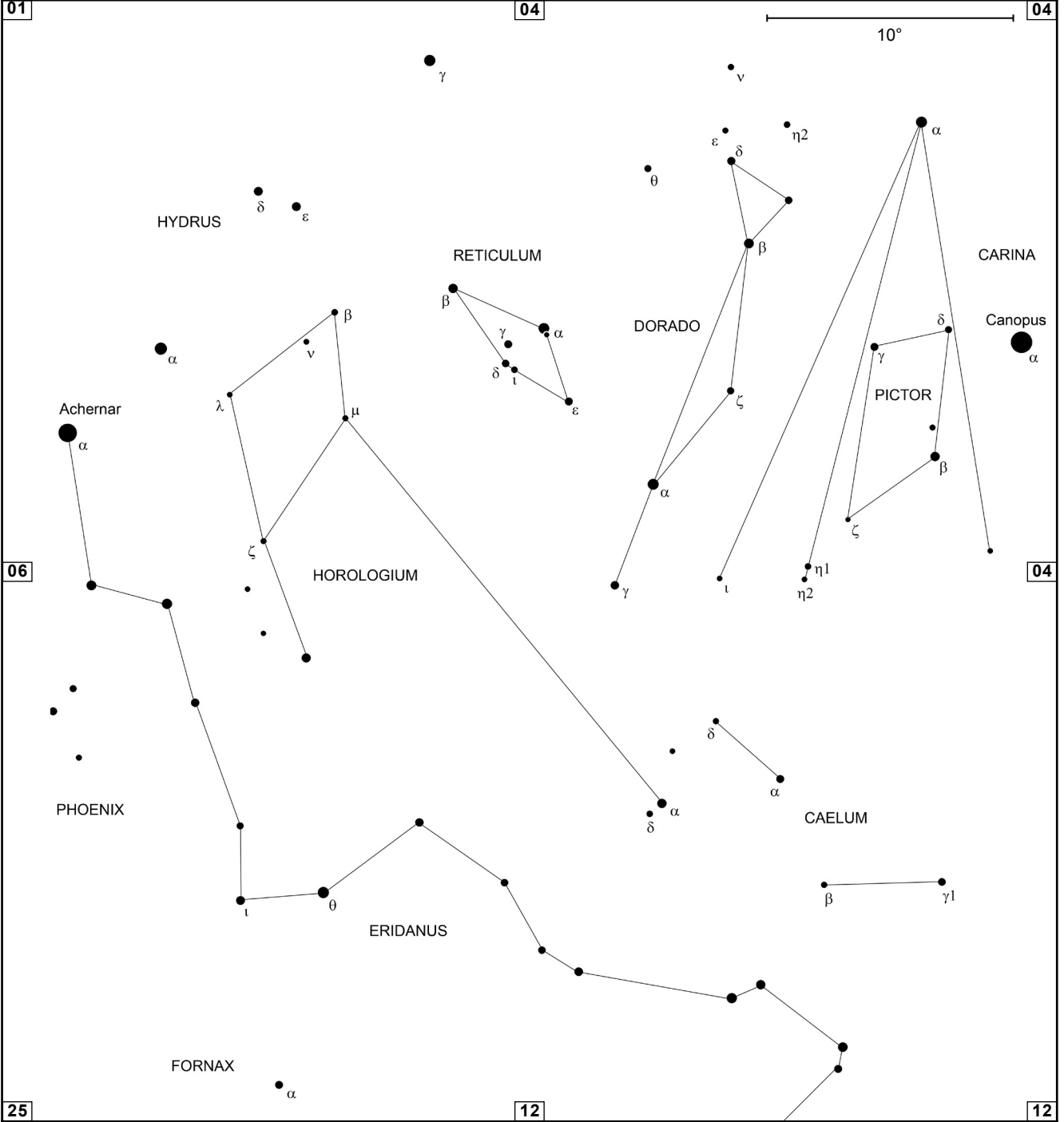
chart 05

- **Caelum** [SEE-lum], the Chisel (Cae, Caeli)
- **Dorado** [doh-RAH-doh], the Swordfish (Dor, Doradus)
- **Horologium** [hor-oh-LOH-jee-um], the Pendulum Clock (Hor, Horologii)

- **Pictor** [PIK-tor], the Painter's Easel (Pic, Pictoris)
- **Reticulum** [reh-TIK-u-lum], the Reticule or Rhomboidal Net (Ret, Reticuli)

October – April

α alpha, β beta, γ gamma, δ delta, ε epsilon, ζ zeta, η eta, θ theta, ι iota, κ kappa, λ lambda, μ mu, ν nu, ξ xi, ο omicron, π pi, ρ rho, σ sigma, τ tau, υ upsilon, φ phi, χ chi, ψ psi, ω omega



Notes

Discover!

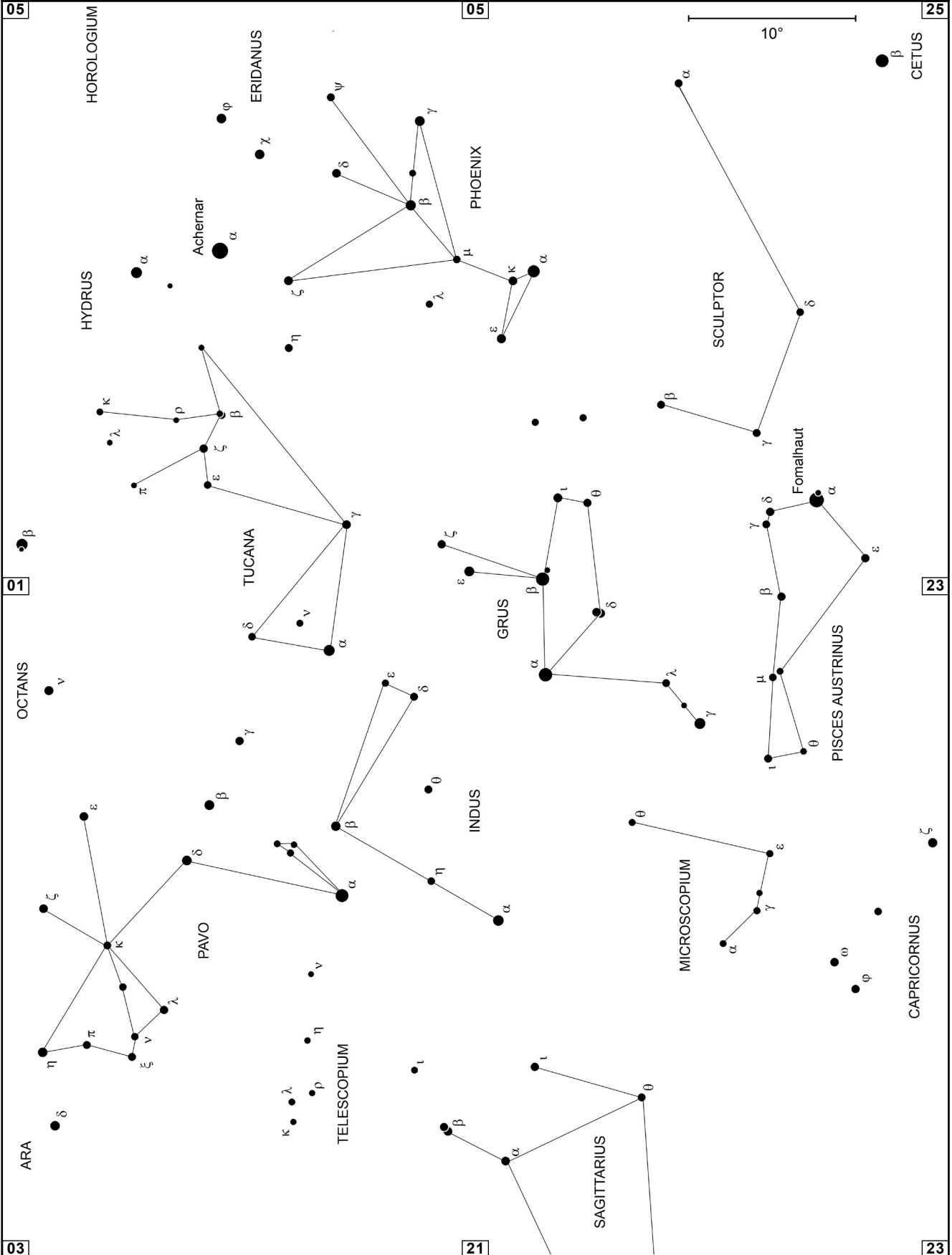
**chart
06**

- **Grus** [GROOS], the Crane. (Gruis, Gru)
- **Indus** [IN-dus], the Indian. (Indi, Ind)
- **Microscopium** [my-kro-SKO-pee-um], the Microscope. (Microscopii, Mic)
- **Pavo** [PAH-voh], the Peacock. (Pavonis, Pav)

- **Phoenix** [FEE-nicks], the Phoenix. (Phoenicis, Phe)
- **Piscis Austrinus** [PIE-sis OSS-trih-nuss], the Southern Fish. (Piscis Austrini, PsA)
- **Tucana** [too-KAN-ah], the Toucan. (Tucanae, Tuc)

July – January

α alpha, β beta, γ gamma, δ delta, ϵ epsilon, ζ zeta, η eta, θ theta, ι iota, κ kappa, λ lambda, μ mu, ν nu, ξ xi, \omicron omicron, π pi, ρ rho, σ sigma, τ tau, υ upsilon, ϕ phi, χ chi, ψ psi, ω omega



Discover!

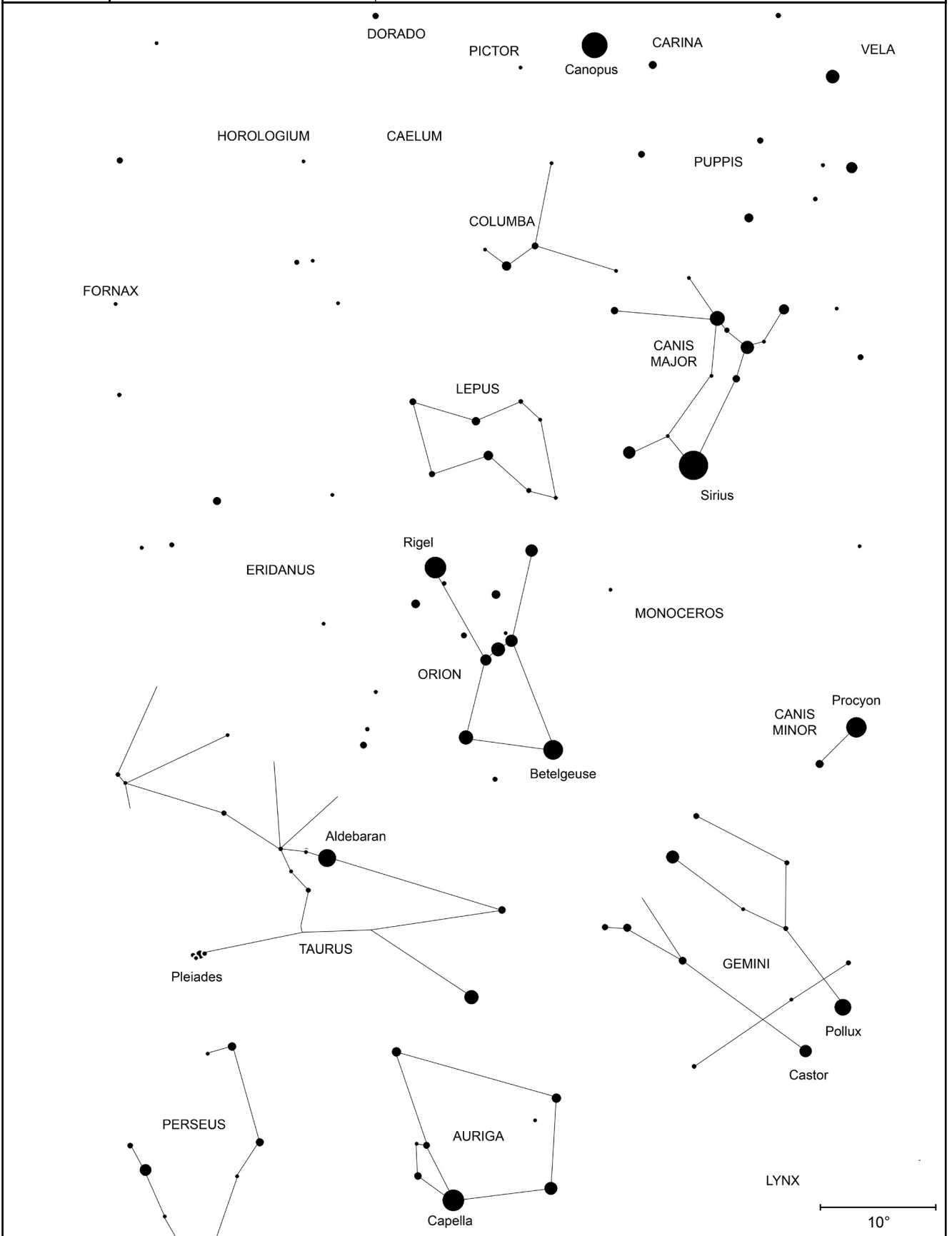
chart 07

- **Auriga** [oh-RYE-gah], the Charioteer. (Aurigae, Aur)
- **Canis Major** [KAH-niss MAY-jer], the Big Dog. (Canis Majoris, CMa)
- **Canis Minor** [KAH-niss MY-ner], the Little Dog. (Canis Minoris, CMi)
- **Columba** [koh-LUM-bah], the Dove. (Columbae, Col)

- **Gemini** [JEM-eh-nye], the Twins. (Geminorum, Gem)
- **Lepus** [LEE-pus], the Hare. (Leporis, Lep)
- **Orion** [oh-RYE-un], the Hunter. (Orionis, Ori)
- **Perseus** [PURR-see-us], the Champion. (Persei, Per)
- **Taurus** [TORR-us], the Bull. (Tauri, Tau)

December – March

α alpha, β beta, γ gamma, δ delta, ε epsilon, ζ zeta, η eta, θ theta, ι iota, κ kappa,
 λ lambda, μ mu, ν nu, ξ xi, ο omicron, π pi, ρ rho, σ sigma, τ tau, υ upsilon, φ phi,
 χ chi, ψ psi, ω omega



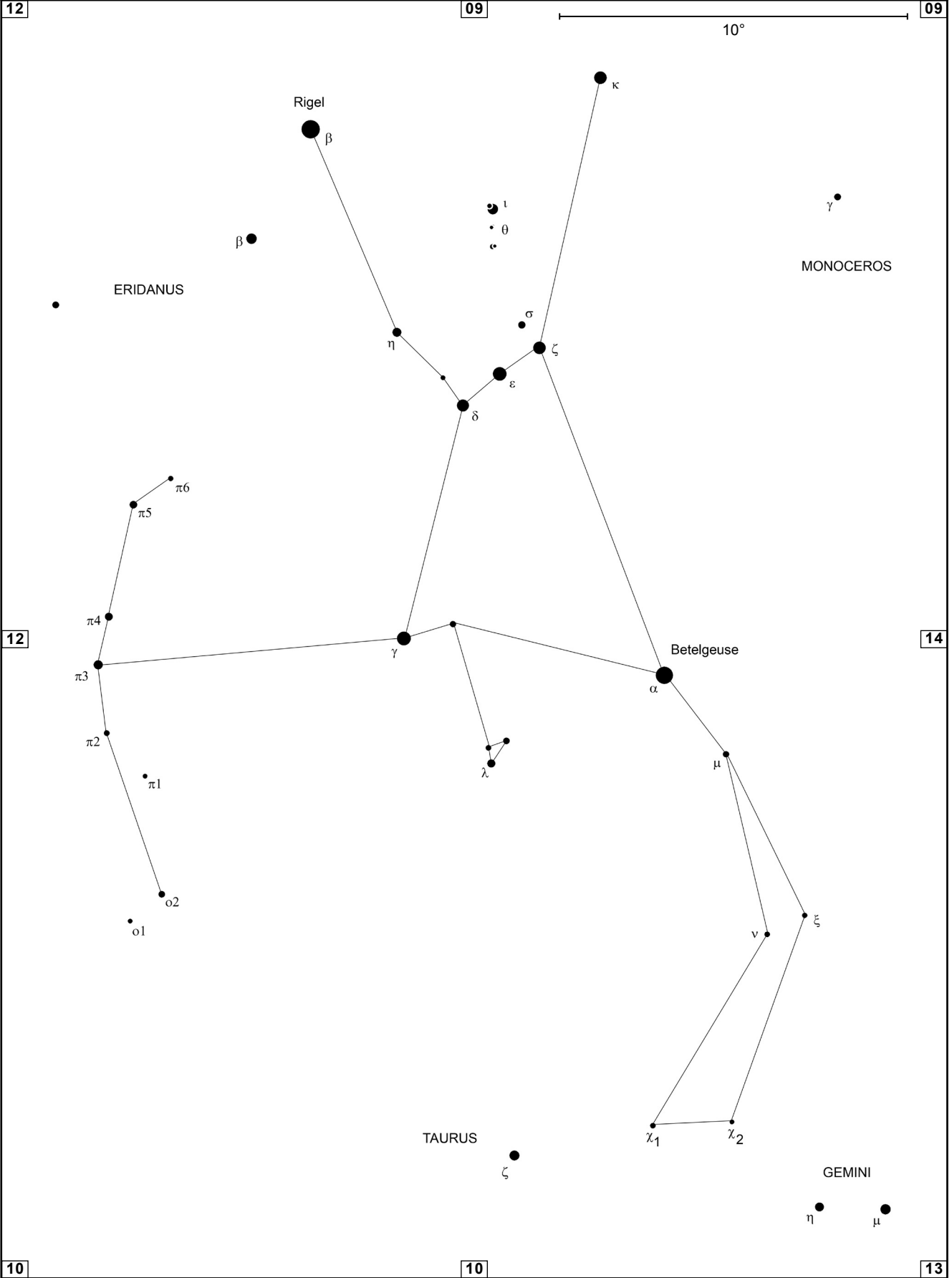
Discover!

• Orion [oh-RYE-un], the Hunter. (Orionis, Ori)

chart
08

November – April

α alpha, β beta, γ gamma, δ delta, ε epsilon, ζ zeta, η eta, θ theta, ι iota, κ kappa,
λ lambda, μ mu, ν nu, ξ xi, ο omicron, π pi, ρ rho, σ sigma, τ tau, υ upsilon, φ phi,
χ chi, ψ psi, ω omega



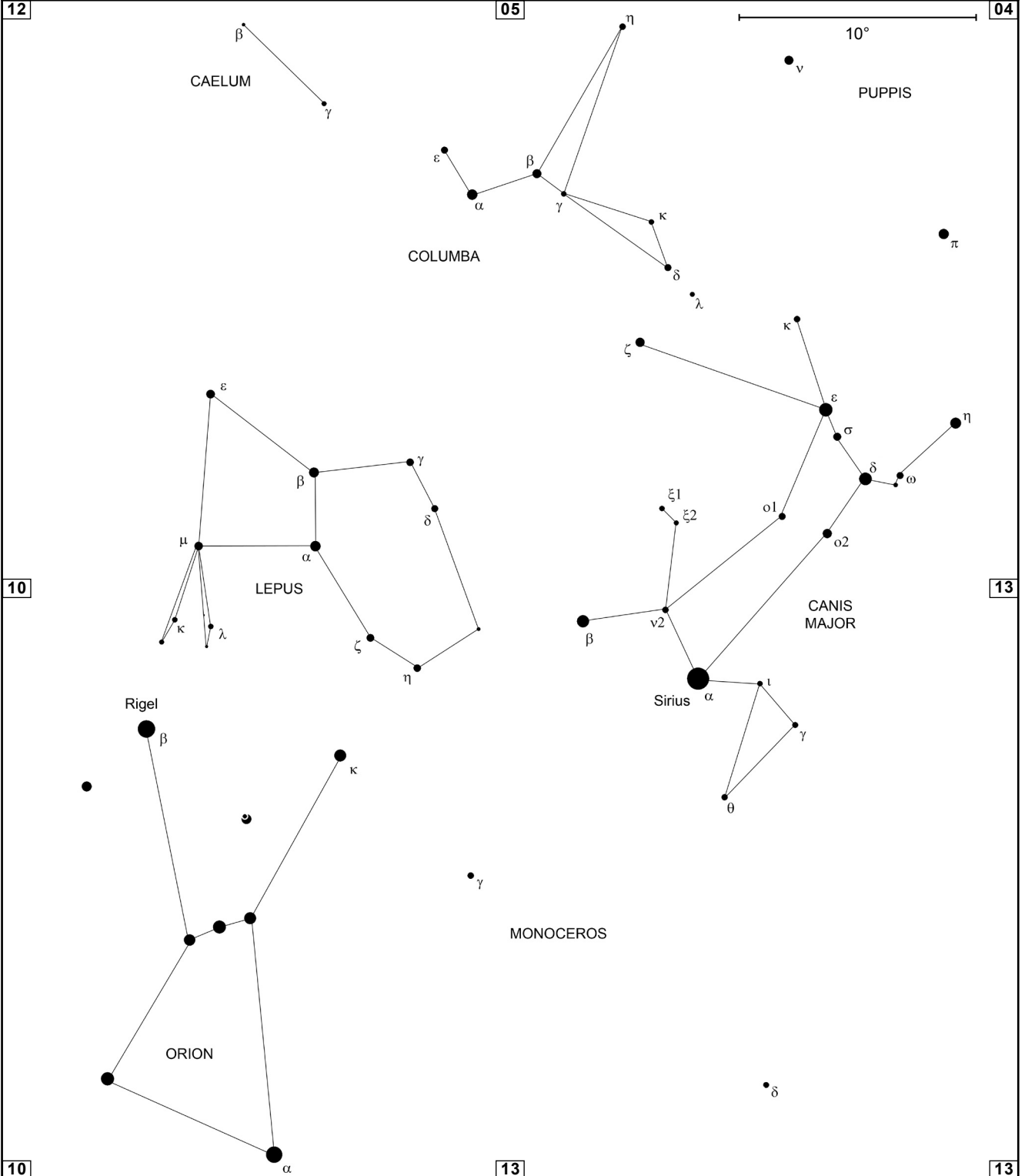
Discover!

chart 09

- **Canis Major** [KAH-niss MAY-jer], the Big Dog. (Canis Majoris, CMa)
- **Columba** [koh-LUM-bah], the Dove. (Columbae, Col)
- **Lepus** [LEE-pus], the Hare. (Leporis, Lep)

November – April

α alpha, β beta, γ gamma, δ delta, ε epsilon, ζ zeta, η eta, θ theta, ι iota, κ kappa, λ lambda, μ mu, ν nu, ξ xi, ο omicron, π pi, ρ rho, σ sigma, τ tau, υ upsilon, φ phi, χ chi, ψ psi, ω omega

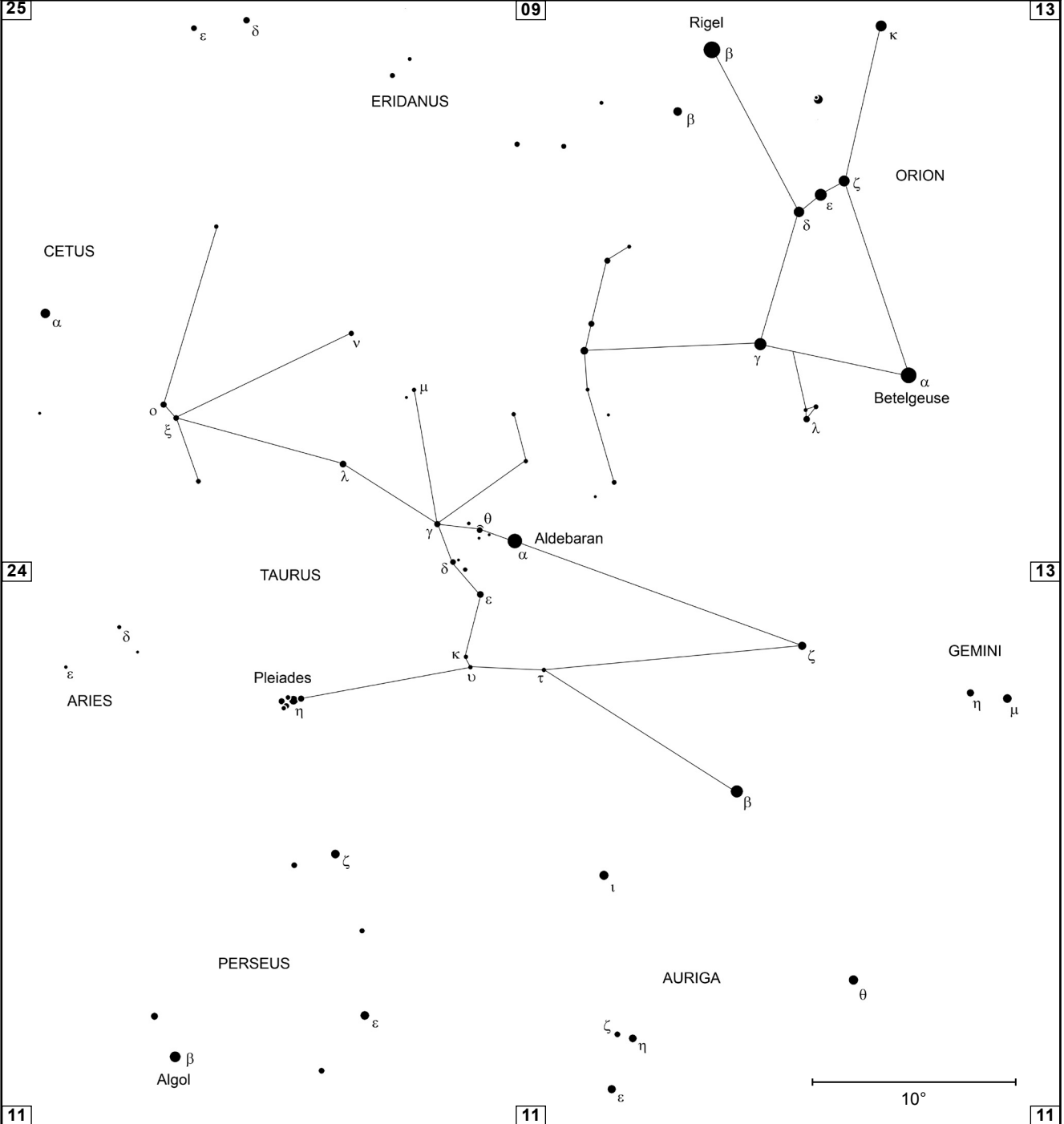


Notes

Notes area for recording observations or additional information.

November – February

α alpha, β beta, γ gamma, δ delta, ε epsilon, ζ zeta, η eta, θ theta, ι iota, κ kappa, λ lambda, μ mu, ν nu, ξ xi, ο omicron, π pi, ρ rho, σ sigma, τ tau, υ upsilon, φ phi, χ chi, ψ psi, ω omega



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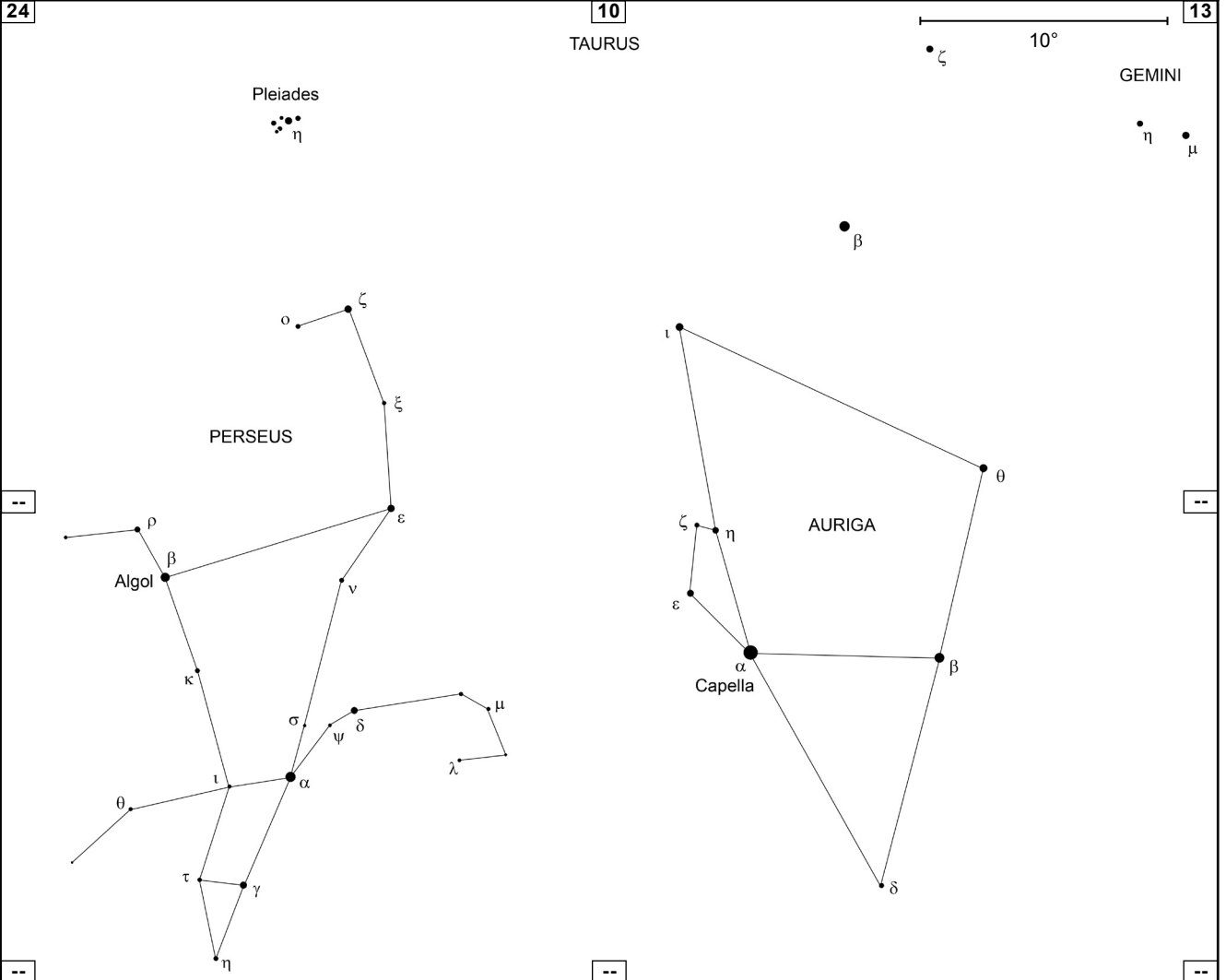
Discover!

chart
11

- Auriga [oh-RYE-gah], the Charioteer (Aurigae, Aur)
- Perseus [PURR-see-us], the Champion (Persei, Per)

December – January

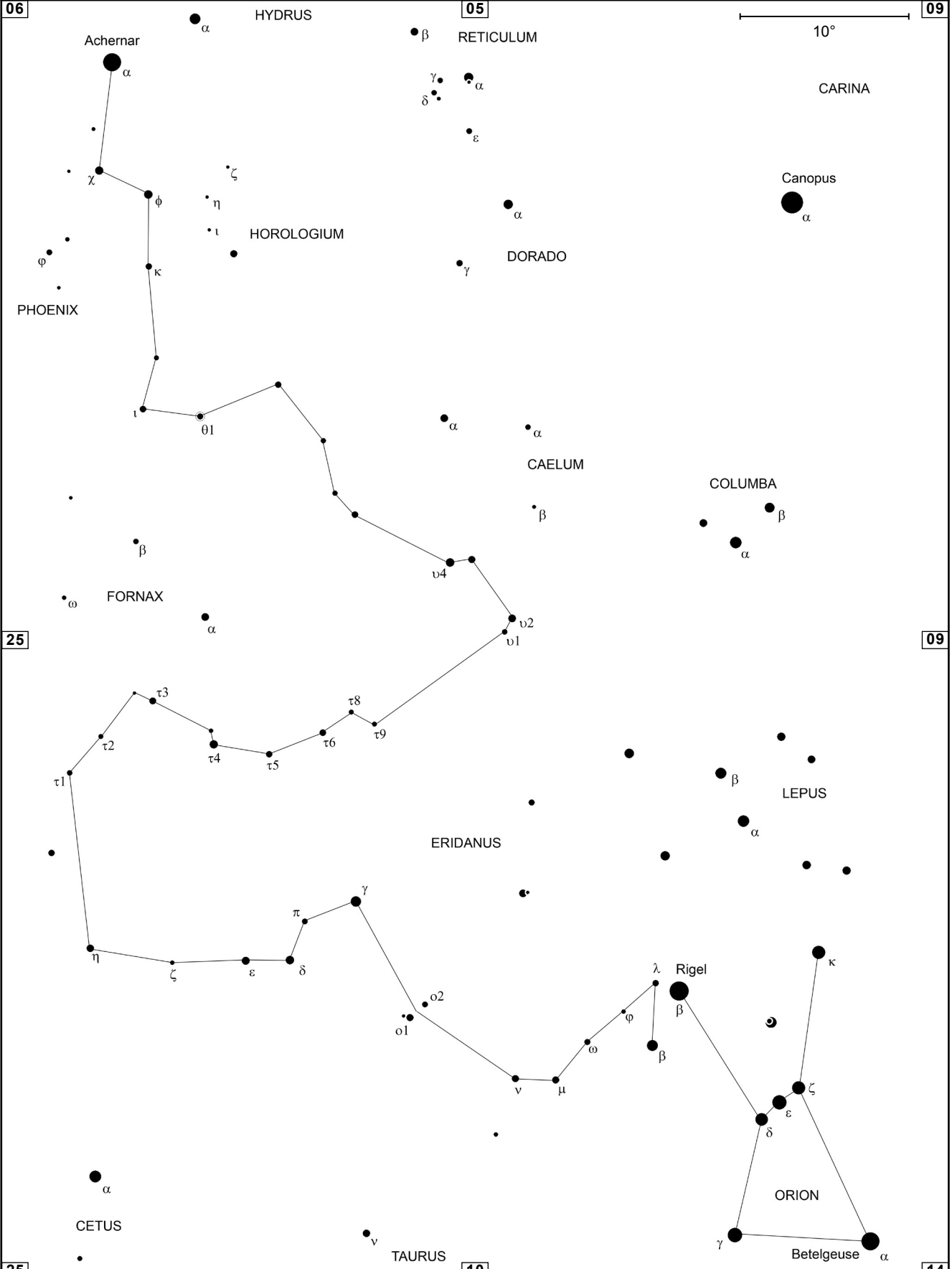
α alpha, β beta, γ gamma, δ delta, ε epsilon, ζ zeta, η eta, θ theta, ι iota, κ kappa, λ lambda, μ mu, ν nu, ξ xi, ο omicron, π pi, ρ rho, σ sigma, τ tau, υ upsilon, φ phi, χ chi, ψ psi, ω omega



Notes

November – March

α alpha, β beta, γ gamma, δ delta, ε epsilon, ζ zeta, η eta, θ theta, ι iota, κ kappa, λ lambda, μ mu, ν nu, ξ xi, ο omicron, π pi, ρ rho, σ sigma, τ tau, υ upsilon, φ phi, χ chi, ψ psi, ω omega

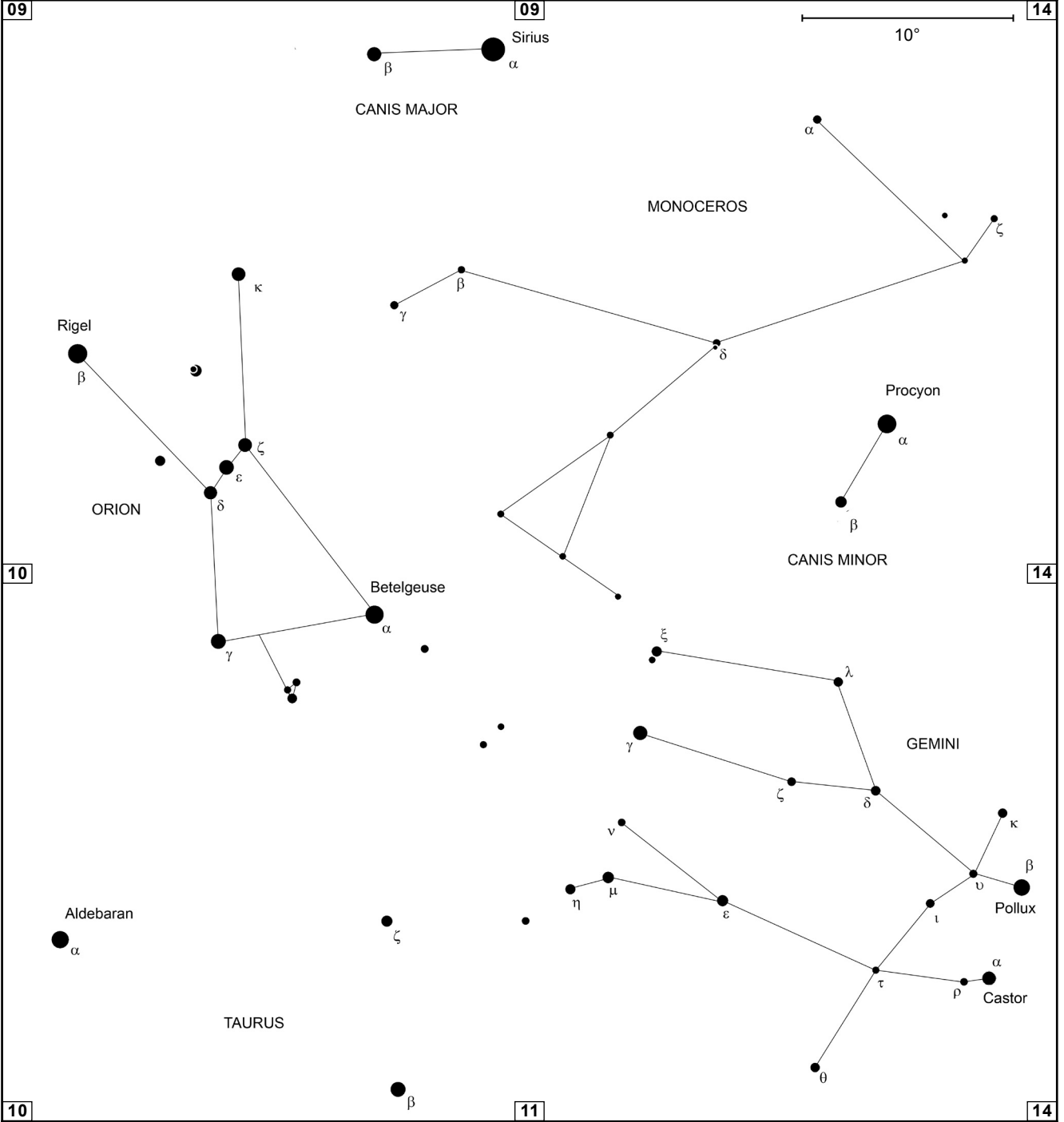


• **Gemini** [JEM-eh-nye], the Twins. (Geminorum, Gem)
• **Canis Minor** [KAH-niss MY-ner], the Little Dog. (Canis Minoris, CMi)

• **Monoceros** [moh-NO-ser-us], the Unicorn. (Monocerotis, Mon)

January – April

α alpha, β beta, γ gamma, δ delta, ε epsilon, ζ zeta, η eta, θ theta, ι iota, κ kappa, λ lambda, μ mu, ν nu, ξ xi, ο omicron, π pi, ρ rho, σ sigma, τ tau, υ upsilon, φ phi, χ chi, ψ psi, ω omega



Notes

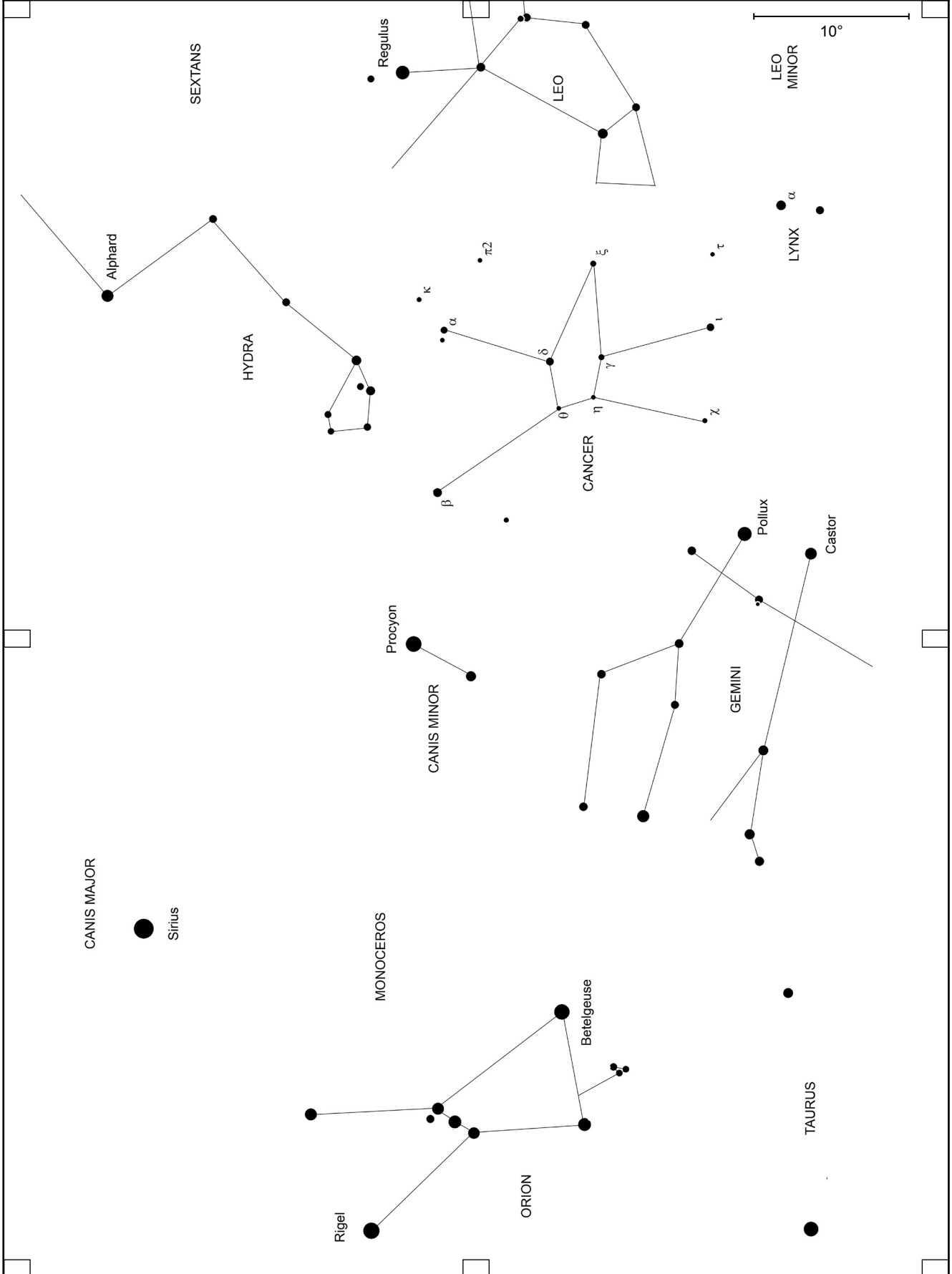
Discover!

- Cancer [CAN-ser], the Crab. (Cancri, Cnc)
- Lynx [LINKS]. (Lyncis, Lyn)

chart
14

January – April

α alpha, β beta, γ gamma, δ delta, ϵ epsilon, ζ zeta, η eta, θ theta, ι iota, κ kappa, λ lambda, μ mu, ν nu, ξ xi, \omicron omicron, π pi, ρ rho, σ sigma, τ tau, υ upsilon, ϕ phi, χ chi, ψ psi, ω omega



Discover!

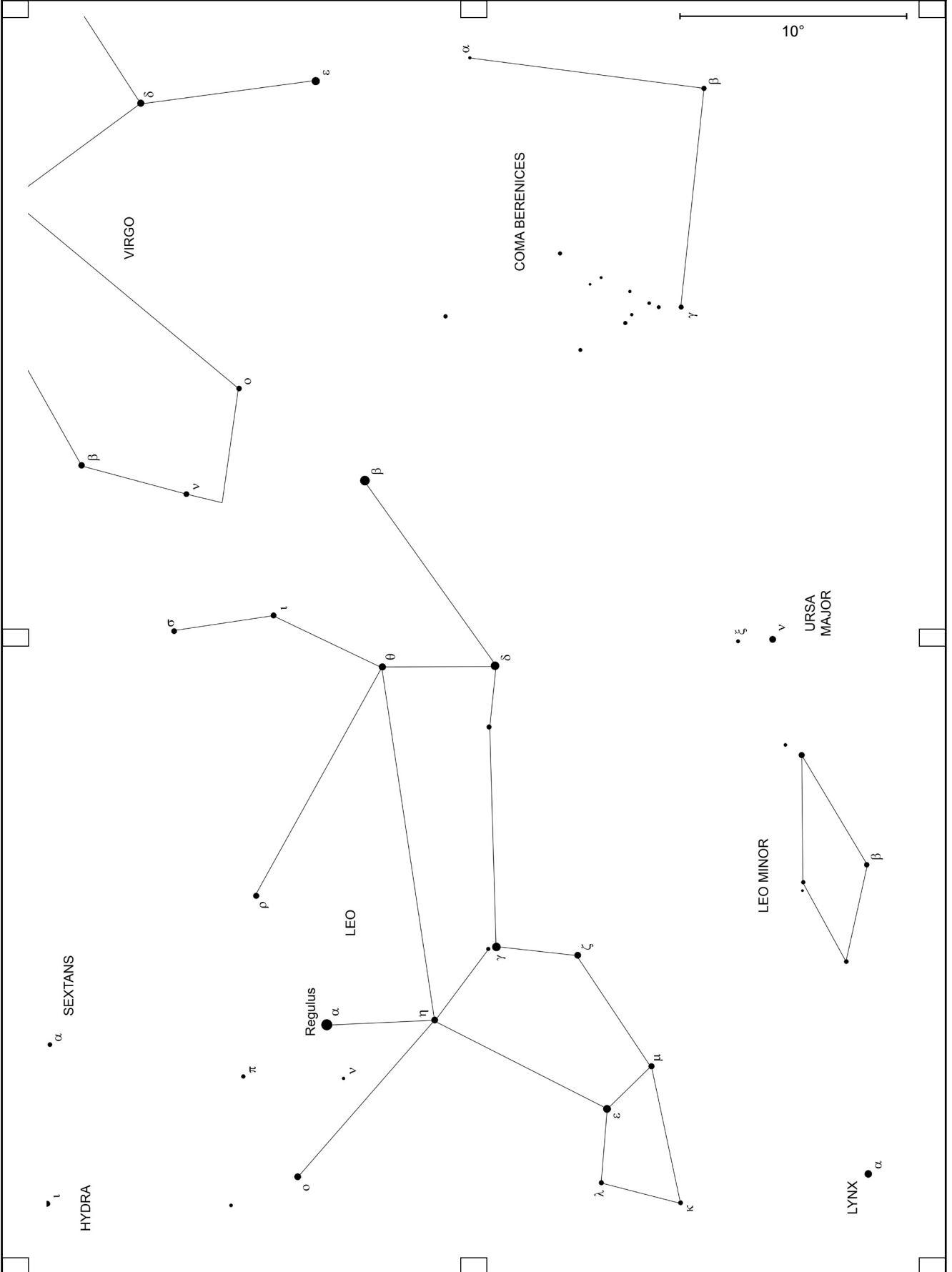
chart 15

- **Leo** [LEE-oh], the Lion. (Leonis, Leo)
- **Leo Minor** [LEE-oh MY-ner], the Little Lion. (Leonis Minoris, LMi)

- **Coma Berenices** [KOH-mah bear-eh-NEE-seez], Berenice's Hair (Comae Berenices, Com)

March – June

α alpha, β beta, γ gamma, δ delta, ε epsilon, ζ zeta, η eta, θ theta, ι iota, κ kappa, λ lambda, μ mu, ν nu, ξ xi, ο omicron, π pi, ρ rho, σ sigma, τ tau, υ upsilon, φ phi, χ chi, ψ psi, ω omega



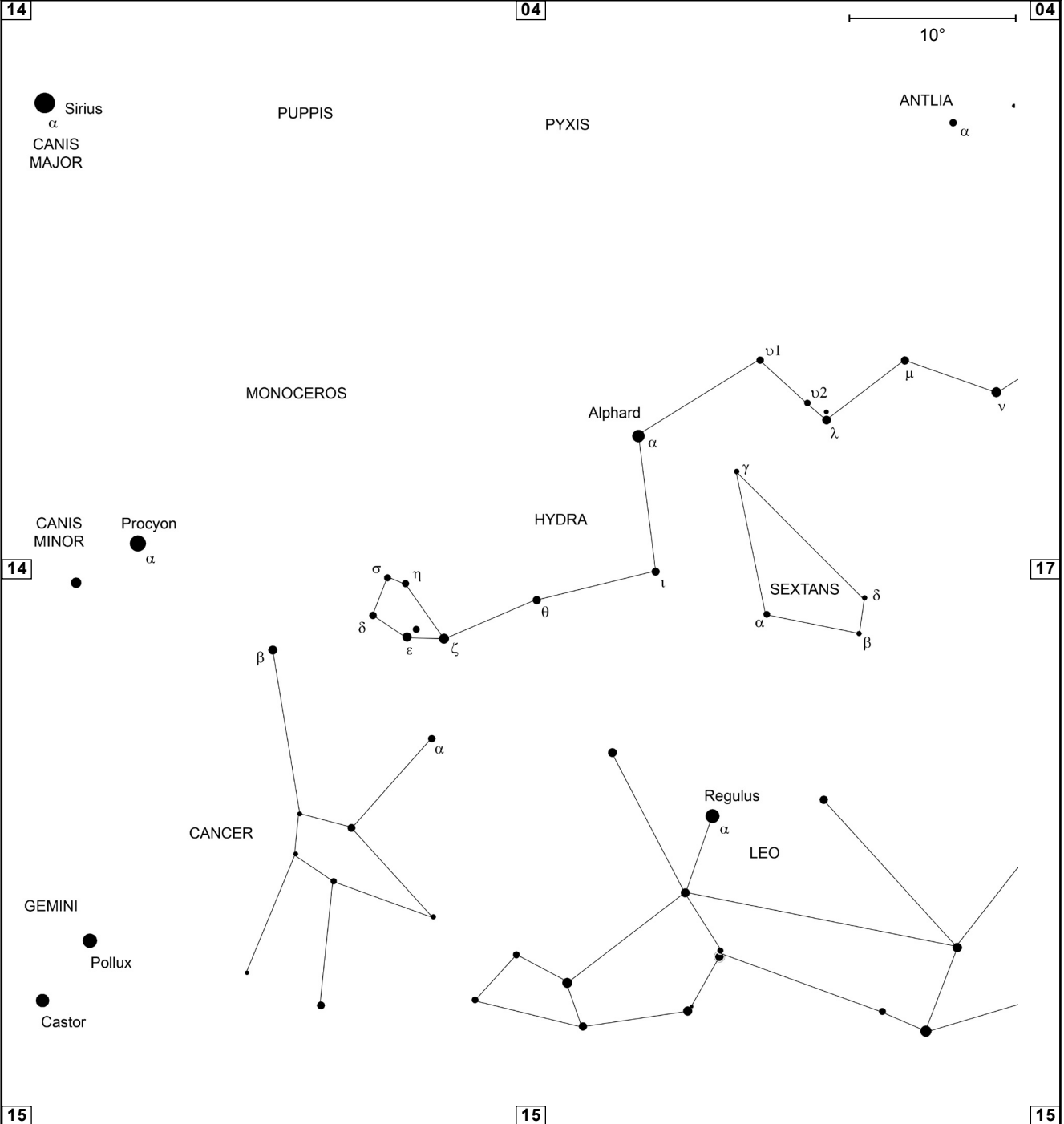
Discover!

- Hydra [HY-dra], the Water Monster. (Hydrae, Hya)
- Sextans [SEX-tanz], the Sextant. (Sextantis, Sex)

chart
16

February – May

α alpha, β beta, γ gamma, δ delta, ϵ epsilon, ζ zeta, η eta, θ theta, ι iota, κ kappa, λ lambda, μ mu, ν nu, ξ xi, \omicron omicron, π pi, ρ rho, σ sigma, τ tau, υ upsilon, ϕ phi, χ chi, ψ psi, ω omega



Notes

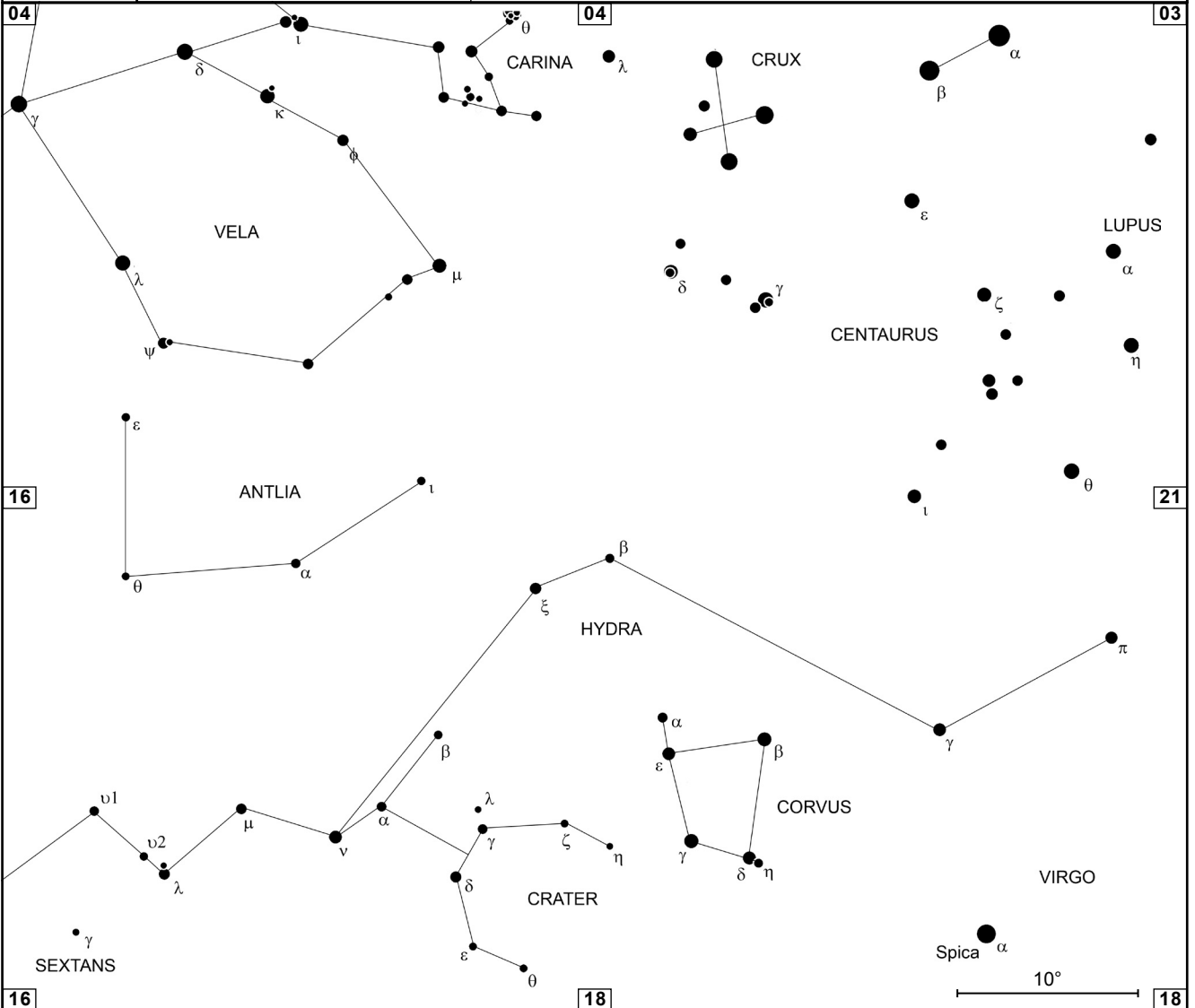
Discover!

chart 17

- Hydra [HY-dra], the Water Monster. (Hydrae, Hya)
- Crater [KRAY-ter], the Cup. (Crateris, Crt)
- Corvus [KOR-vus], the Crow. (Corvi, Crv)

February – July

α alpha, β beta, γ gamma, δ delta, ε epsilon, ζ zeta, η eta, θ theta, ι iota, κ kappa,
 λ lambda, μ mu, ν nu, ξ xi, ο omicron, π pi, ρ rho, σ sigma, τ tau, υ upsilon, φ phi,
 χ chi, ψ psi, ω omega



Notes

Discover!

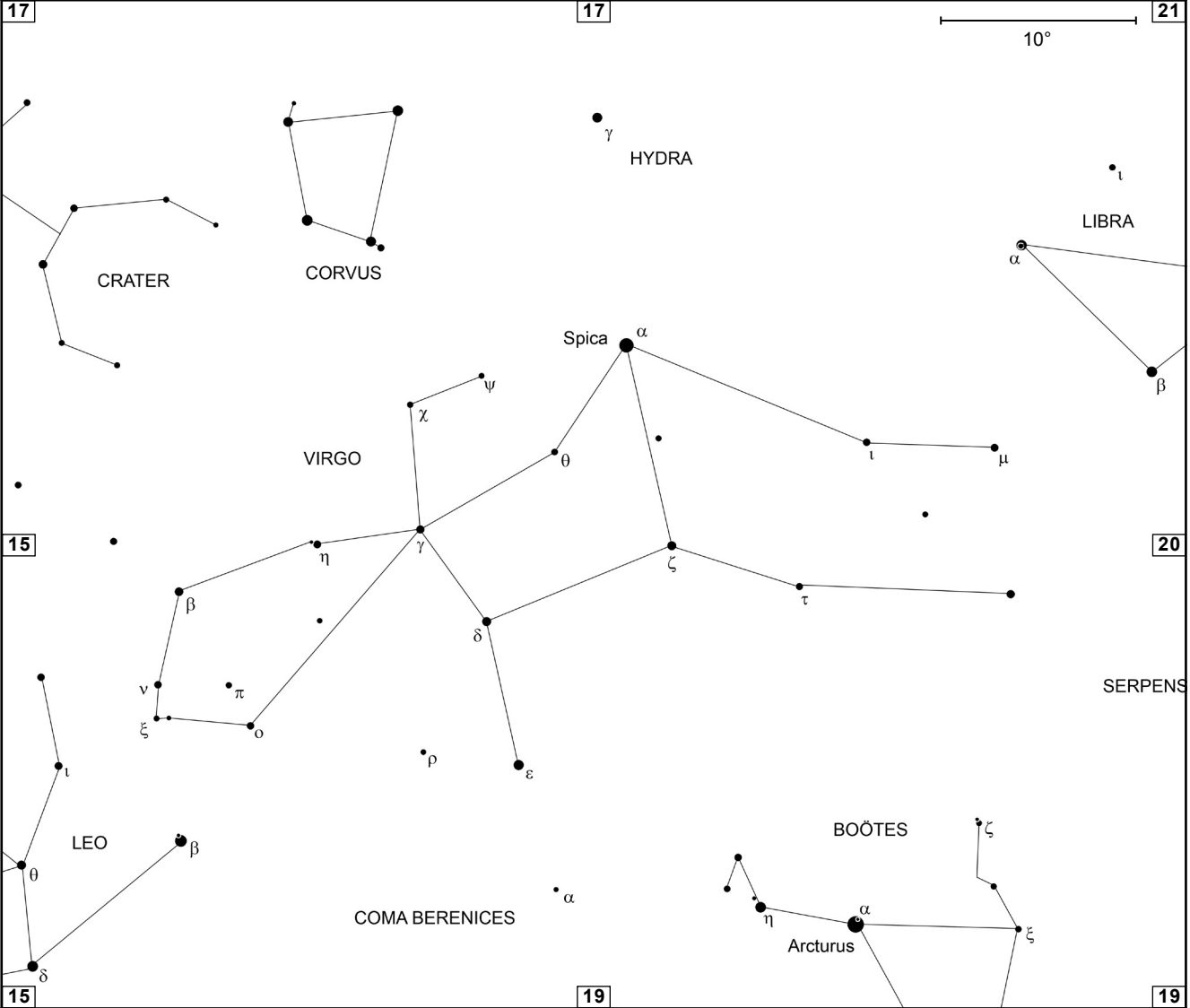
• **Virgo** [VER-go], the Virgin. (Virginis, Vir)

chart

18

April – July

α alpha, β beta, γ gamma, δ delta, ϵ epsilon, ζ zeta, η eta, θ theta, ι iota, κ kappa, λ lambda, μ mu, ν nu, ξ xi, \omicron omicron, π pi, ρ rho, σ sigma, τ tau, υ upsilon, ϕ phi, χ chi, ψ psi, ω omega



Notes

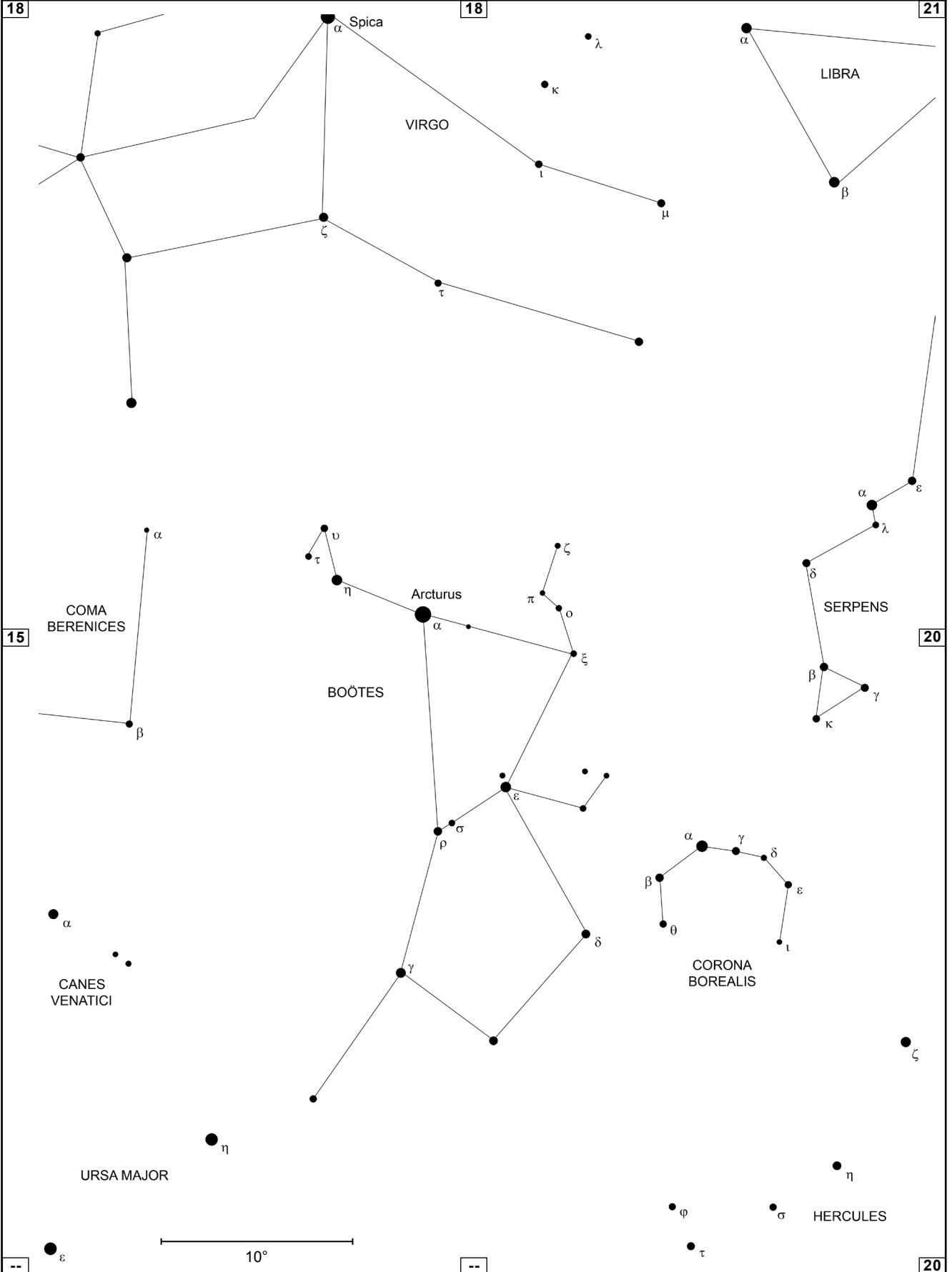
Discover!

chart 19

- **Boötes** [boh-OH-teez], the Herdsman. (Boötis, Boo)
- **Corona Borealis** [kor-OH-nah bor-ee-AL-is], the Northern Crown. (Coronae Borealis, CrB)

May – July

α alpha, β beta, γ gamma, δ delta, ε epsilon, ζ zeta, η eta, θ theta, ι iota, κ kappa, λ lambda, μ mu, ν nu, ξ xi, ο omicron, π pi, ρ rho, σ sigma, τ tau, υ upsilon, φ phi, χ chi, ψ psi, ω omega



Discover!

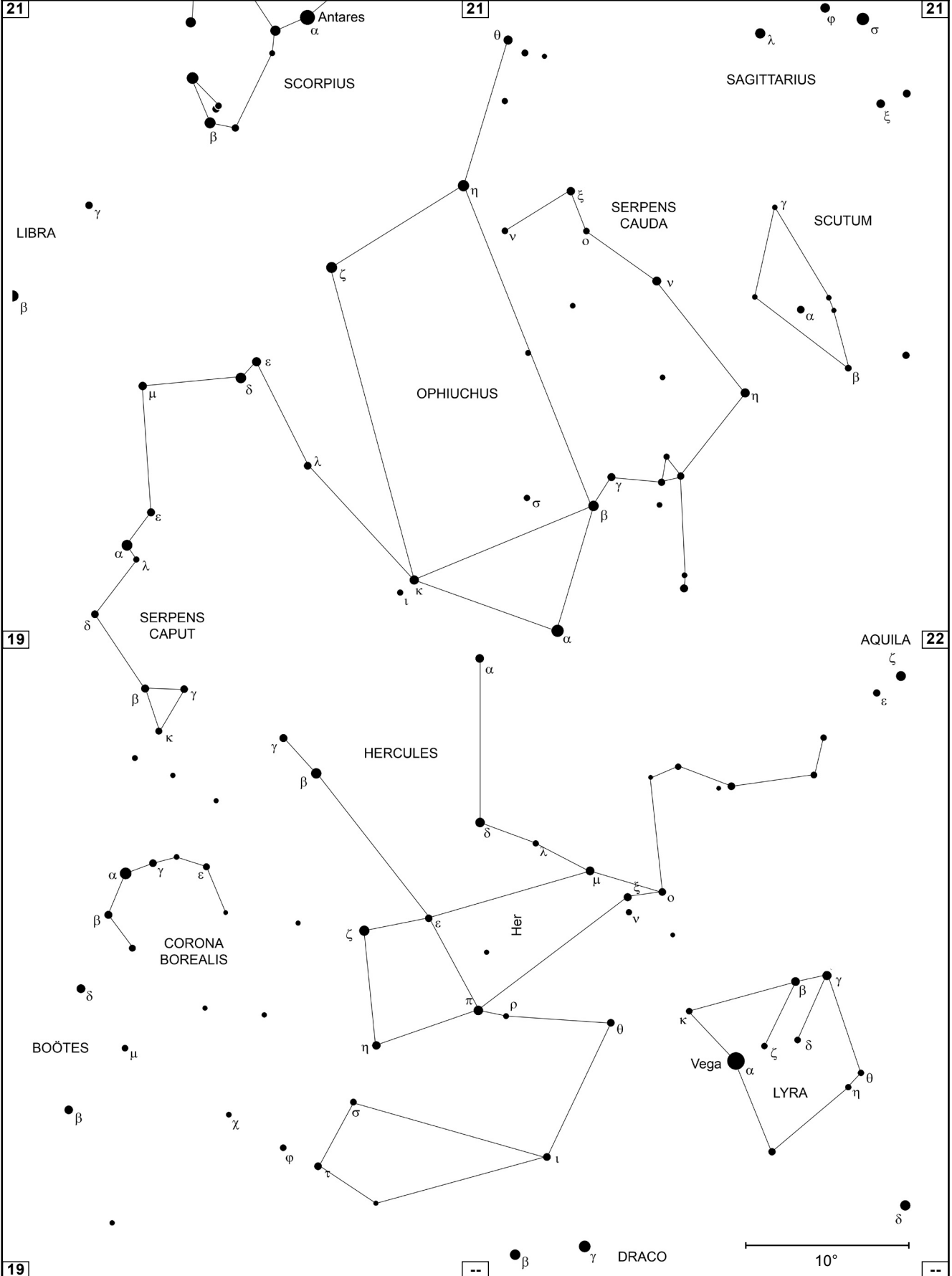
chart
20

- **Hercules** [HER-kyu-leez]. (Herculis, Her)
- **Serpens** [SIR-penz], the Serpent. (Serpentis, Ser) (*caput*, head; *cauda*, tail)

- **Ophiuchus** [oh-fee-U-cuss], Ophiuchus the Serpent-Holder. (Ophiuchi, Oph)

July – September

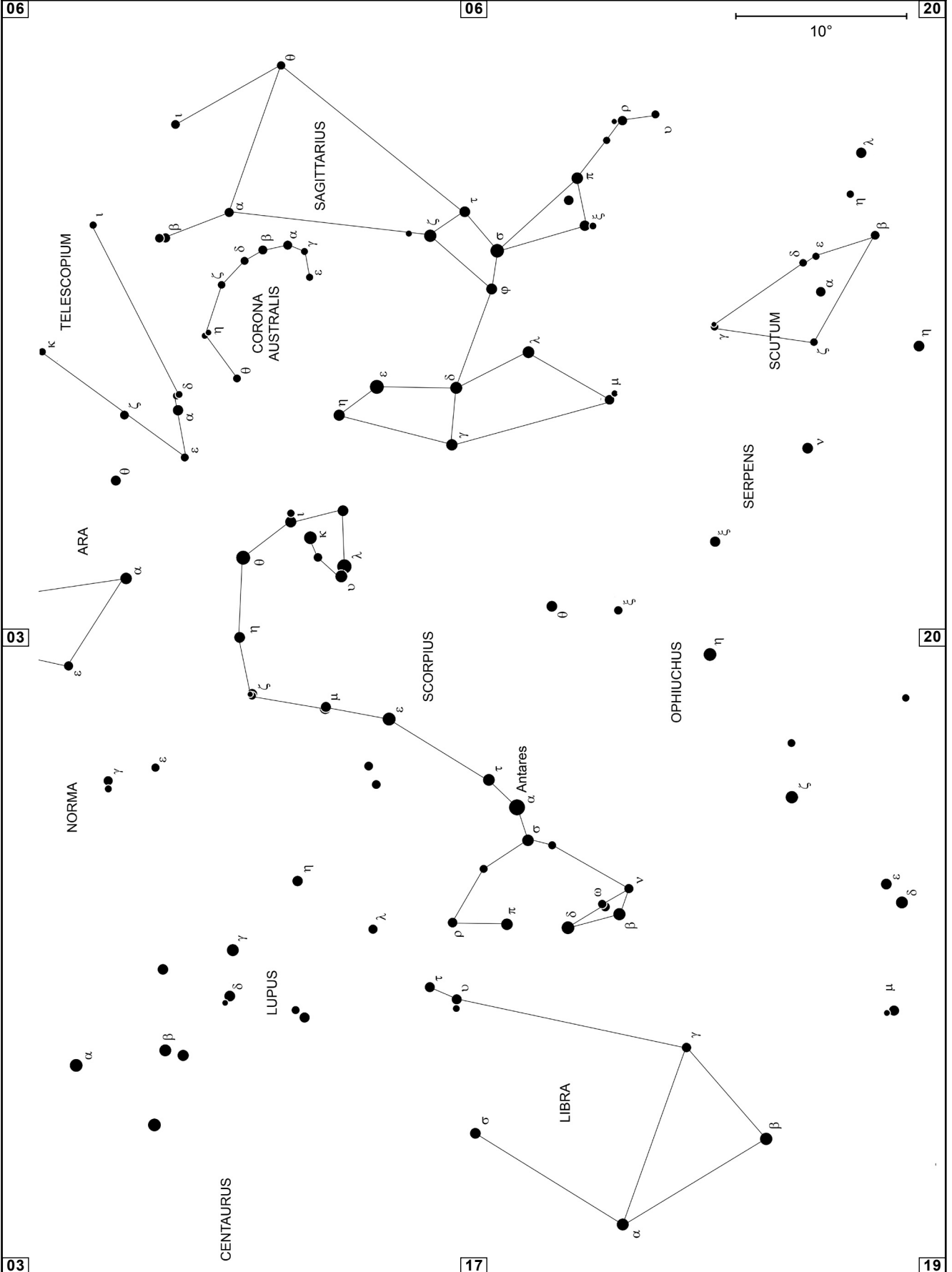
α alpha, β beta, γ gamma, δ delta, ε epsilon, ζ zeta, η eta, θ theta, ι iota, κ kappa, λ lambda, μ mu, ν nu, ξ xi, ο omicron, π pi, ρ rho, σ sigma, τ tau, υ upsilon, φ phi, χ chi, ψ psi, ω omega



- **Scorpius** [SKOR-pee-us], the Scorpion. (Scorpii, Sco)
- **Sagittarius** [sadge-ih-TAIR-ee-us], Archer. (Sagittarii, Sgr)
- **Libra** [LEE-bra], the Scales. (Librae, Lib)
- **Scutum** [SKU-tum], the Shield. (Scuti, Sct)
- **Telescopium** [tel-eh-SKO-pee-um], the Telescope. (Telescopii, Tel)
- **Corona Australis** [kor-OH-nah os-TRAH-lis], Southern Crown. (Coronae Australis, CrA)

May – October

α alpha, β beta, γ gamma, δ delta, ε epsilon, ζ zeta, η eta, θ theta, ι iota, κ kappa, λ lambda, μ mu, ν nu, ξ xi, ο omicron, π pi, ρ rho, σ sigma, τ tau, υ upsilon, φ phi, χ chi, ψ psi, ω omega



Discover!

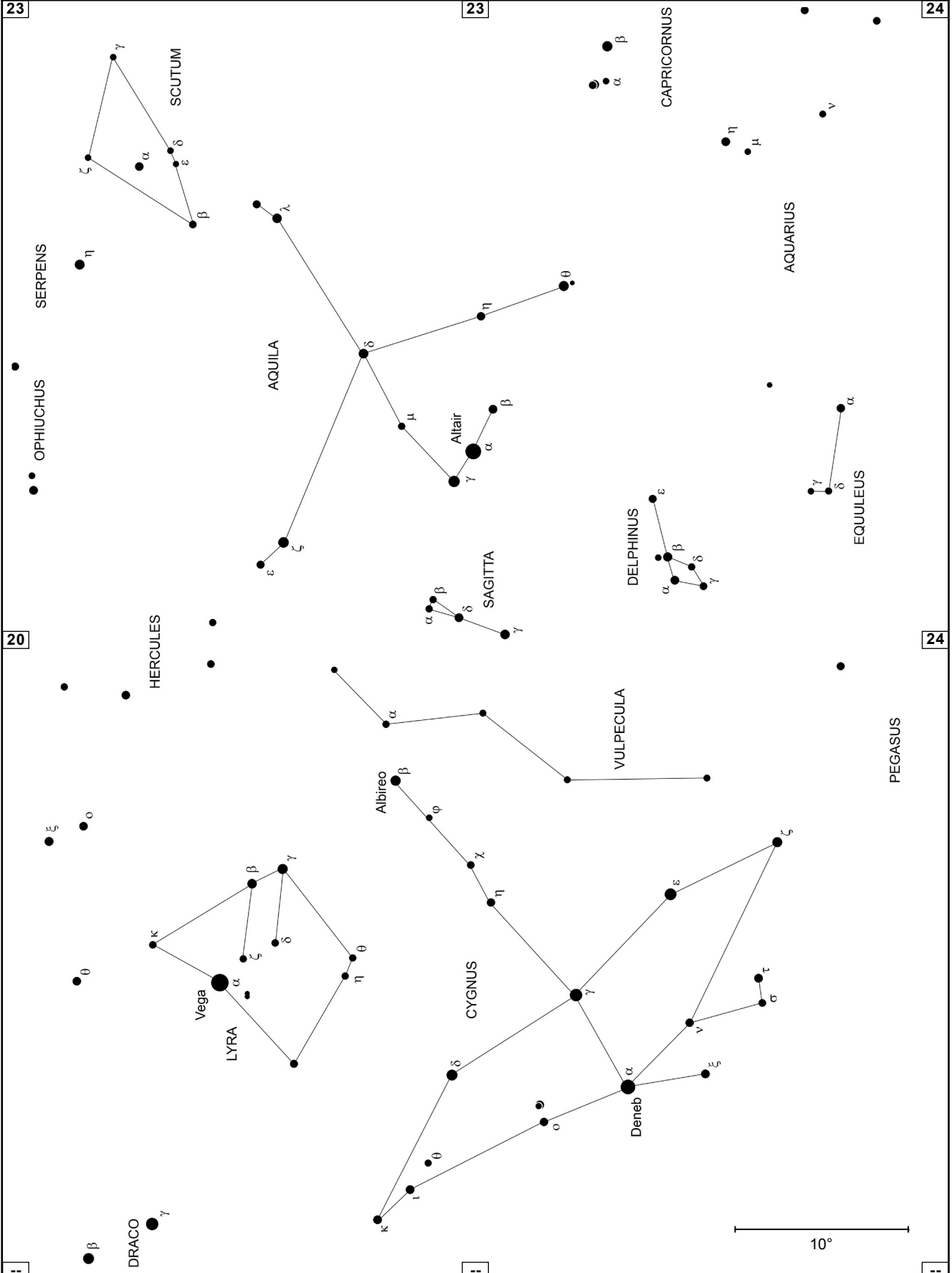
chart
22

- **Delphinus** [del-FIE-nus], the Dolphin. (Delphini, Del)
- **Scutum** [SKU-tum], the Shield. (Scuti, Sct)
- **Equuleus** [eh-KWOO-lee-us], Little Horse. (Equulei, Equ)
- **Vulpecula** [vul-PECK-you-lah], the Fox. (Vulpeculae, Vul)

- **Aquila** [uh-KWI-luh], the Eagle. (Aquilae, Aql)
- **Sagitta** [sa-JIT-ah], the Arrow. (Sagittae, Sge)
- **Cygnus** [SIG-nus], the Swan. (Cygni, Cyg)
- **Lyra** [LYE-rah], the Lyre. (Lyrae, Lyr)

August – October

α alpha, β beta, γ gamma, δ delta, ε epsilon, ζ zeta, η eta, θ theta, ι iota, κ kappa, λ lambda, μ mu, ν nu, ξ xi, ο omicron, π pi, ρ rho, σ sigma, τ tau, υ upsilon, φ phi, χ chi, ψ psi, ω omega



Discover!

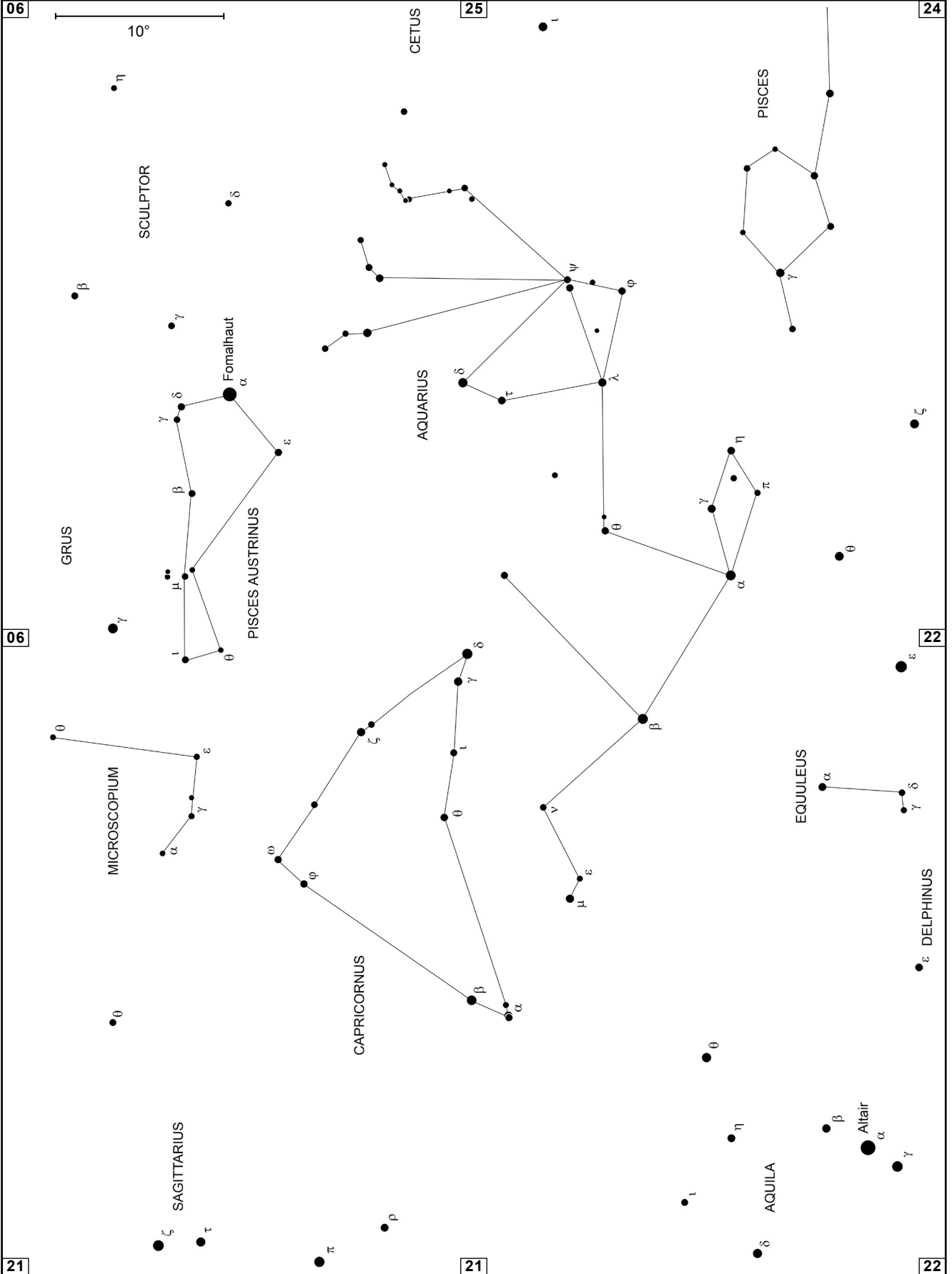
chart 23

- **Aquarius** [ah-KWAIR-ee-us], Water Bearer. (Aquarii, Aqr)
- **Capricornus** [kap-reh-KOR-nuss], the Sea-Goat. (Capricorni, Cap)

- **Piscis Austrinus** [PIE-sis OSS-trih-nuss], the Southern Fish. (Piscis Austrini, PsA)

August – November

α alpha, β beta, γ gamma, δ delta, ε epsilon, ζ zeta, η eta, θ theta, ι iota, κ kappa, λ lambda, μ mu, ν nu, ξ xi, ο omicron, π pi, ρ rho, σ sigma, τ tau, υ upsilon, φ phi, χ chi, ψ psi, ω omega



Discover!

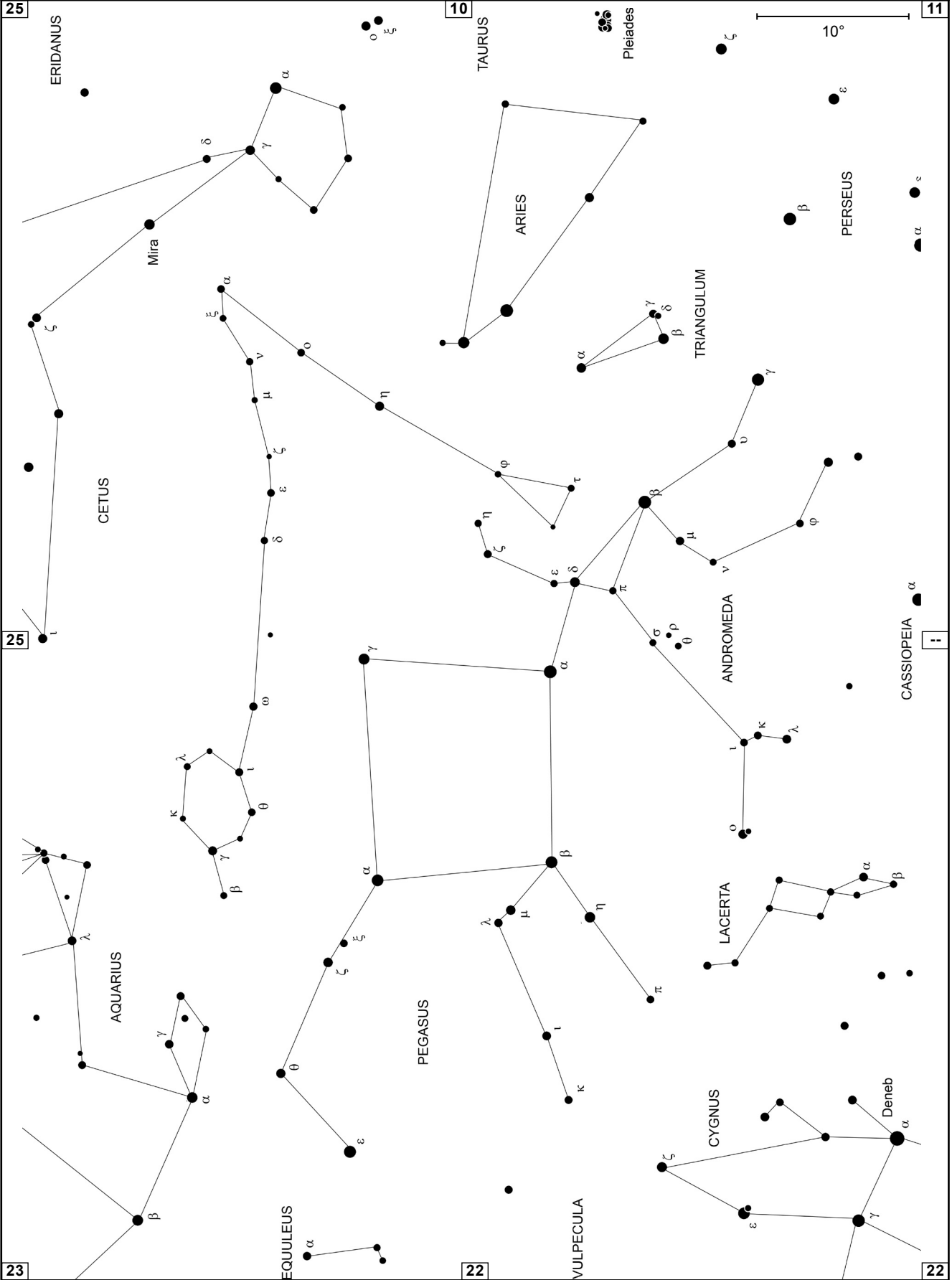
chart
24

- **Pegasus** [PEG-a-sus], Winged Horse. (Pegasi, Peg)
- **Pisces** [PIE-seez], the Fish. (Piscium, Psc)
- **Andromeda** [an-DROH-me-duh], the Chained Woman (Andromedae, And)

- **Triangulum** [tri-ANG-gyu-lum] the Triangle. (Trianguli, Tri)
- **Aries** [AIR-eez], the Ram. (Arietis, Ari)

October – December

α alpha, β beta, γ gamma, δ delta, ε epsilon, ζ zeta, η eta, θ theta, ι iota, κ kappa, λ lambda, μ mu, ν nu, ξ xi, ο omicron, π pi, ρ rho, σ sigma, τ tau, υ upsilon, φ phi, χ chi, ψ psi, ω omega



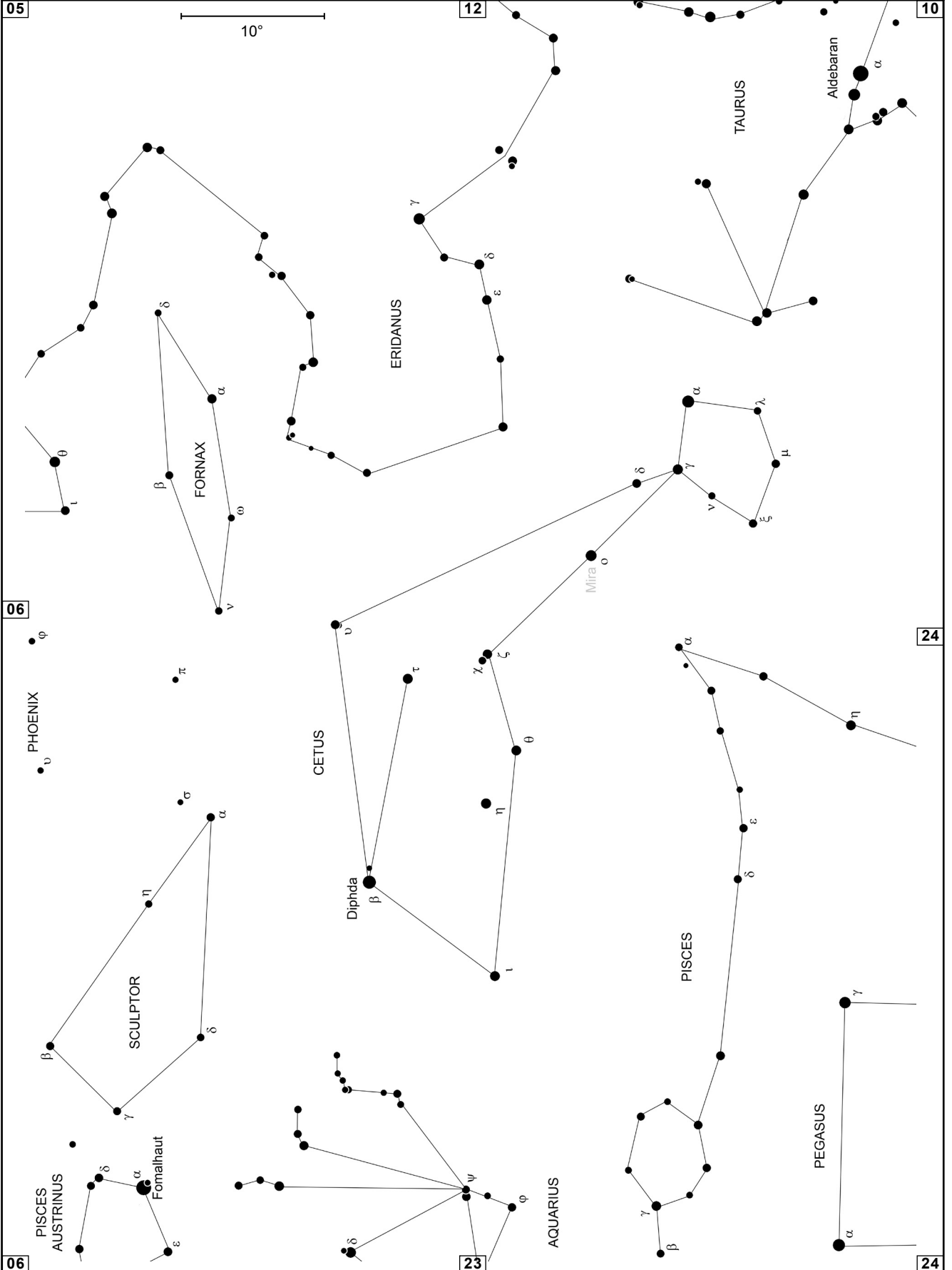
Discover!

chart 25

- **Cetus** [SEE-tus], the Whale. (Ceti, Cet)
- **Fornax** [FOR-nax], the Chemical Furnace. (Fornacis, For)
- **Sculptor** [SKULP-tor], the Sculptor's Workshop. (Sculptoris, Scl)

October – February

α alpha, β beta, γ gamma, δ delta, ε epsilon, ζ zeta, η eta, θ theta, ι iota, κ kappa, λ lambda, μ mu, ν nu, ξ xi, ο omicron, π pi, ρ rho, σ sigma, τ tau, υ upsilon, φ phi, χ chi, ψ psi, ω omega



Observing log

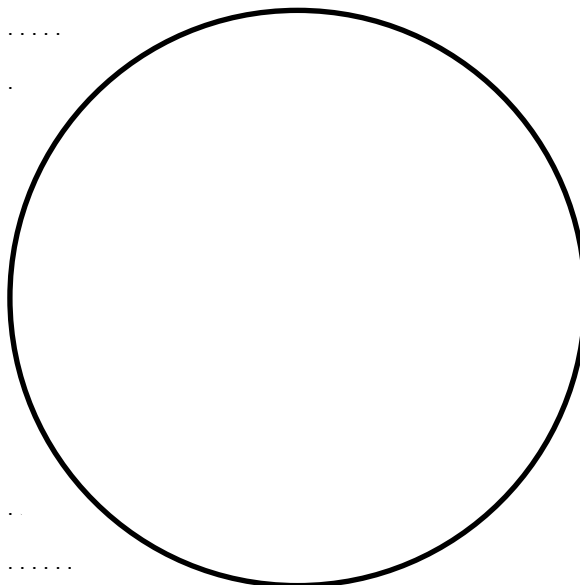
Object number: Observer: Location:

..... Date & time: Instrument:

Sky conditions: Quality of observation:

Description and sketch

.....



Note the size of the field of view sketched, and its orientation.

Discover! Discover the deepsky for yourself.

Star colour record sheet

Star name or identification number	Colour (select one)									
.....	blue	blue white	white	yellow white	light yellow	deep yellow	light orange	deep orange	orange red	red
.....	blue	blue white	white	yellow white	light yellow	deep yellow	light orange	deep orange	orange red	red
.....	blue	blue white	white	yellow white	light yellow	deep yellow	light orange	deep orange	orange red	red
.....	blue	blue white	white	yellow white	light yellow	deep yellow	light orange	deep orange	orange red	red
.....	blue	blue white	white	yellow white	light yellow	deep yellow	light orange	deep orange	orange red	red
.....	blue	blue white	white	yellow white	light yellow	deep yellow	light orange	deep orange	orange red	red
.....	blue	blue white	white	yellow white	light yellow	deep yellow	light orange	deep orange	orange red	red
.....	blue	blue white	white	yellow white	light yellow	deep yellow	light orange	deep orange	orange red	red
.....	blue	blue white	white	yellow white	light yellow	deep yellow	light orange	deep orange	orange red	red
.....	blue	blue white	white	yellow white	light yellow	deep yellow	light orange	deep orange	orange red	red
.....	blue	blue white	white	yellow white	light yellow	deep yellow	light orange	deep orange	orange red	red
.....	blue	blue white	white	yellow white	light yellow	deep yellow	light orange	deep orange	orange red	red

Discover! Discover the deepsky for yourself.

'n Oorsiglys vir diepruim waarneming

weergawe 4, 2008 Februarie
ASSA Deep Sky Obs.Section

Newels

- Wat is jou eerste indruk?
- Hoe maklik is die voorwerp sigbaar? (helderheid; magnitude)
- Wat is die vorm van die newel?
- Hoe groot is die newel?
- Hoe verander die verloop van die helderheid, van buite na binne? (helderheidsprofiel)
- Is daar 'n kern?
- Is die rante skerp of onduidelik?
- Is daar donkerder dele, of areas van onewe helderheid?
- Hoe goed staan die newel uit teen die agtergrond?
- Watter kleur, indien enige, het die newel?
- Is daar sterre baie naby, of binne, die newel?
- Wat is die verband tussen newel & omliggende sterveld?
- Evalueer jou vertroue in hierdie beskrywing.

Sterbondels

- Wat is jou eerste indruk?
- Hoe maklik is die voorwerp sigbaar? (helderheid; magnitude)
- Wat is die vorm van die sterbondel?
- Hoe groot is die sterbondel?
- Is individuele sterre sigbaar? (onopgelos .. korrelig .. gedeeltelik opgelos .. goed opgelos, ens.)
- Hoe bymekaargetrek is die sterre (glad nie .. effens .. sterk gekonsentreerd, ens.)
- Hoe verander die verloop van die helderheid, van buite na binne? (helderheidsprofiel)
- Hoeveel sterre is sigbaar? (maak 'n skatting; tel die aantal binne 'n bepaalde grote area)
- Wat is die bestek van helderheid? (almal ewe helder .. groot verskeidenheid; skat die magnitudes)
- Is daar 'n ooglopende middelster of ander prominente ster betrokke?
- Het enige van die sterre 'n opvallende kleur?
- Is enige van die sterre dubbel?
- Is daar kettings, rye, of klossies sterre?
- Is daar opvallende sterlose kolle?
- Is daar 'n agtergrond gloed? (onopgeloste sterre/newel)
- Wat is die verband tussen die sterbondel en die omliggende sterveld?
- Evalueer jou vertroue in hierdie beskrywing.

A checklist for observing the deep sky

version 4, 2008 February
ASSA Deep Sky Obs.Section

Nebulae

- What are your first impressions?
- How easy is it to see? (visibility; brightness; magnitude)
- What shape is the nebula?
- How big is the nebula?
- How does the brightness change from edge to centre? (brightness profile)
- Is there a nuclear region?
- Are the edges sharp or diffuse?
- Are there darker parts or areas of uneven brightness?
- How well does the nebula stand out from the background field?
- What colour is the nebula?
- Are there stars very near, or within, the nebula?
- How does it relate to the surrounding star field?
- Rate your confidence in this observation.

Star clusters

- What are your first impressions?
- How easy is it to see? (visibility; brightness; magnitude)
- What shape is the cluster?
- How big is the cluster?
- Are individual stars seen? (unresolved .. granular .. partially resolved .. well resolved, etc.)
- Are the stars concentrated towards the centre? (not at all .. slightly .. strongly, etc.)
- How does the brightness change from edge to centre? (brightness profile)
- How many stars can you see? (make an estimate; count the number within a specified diameter)
- What is the range of their brightness? (nearly the same .. mixed; estimate magnitudes)
- Is there an obvious central or other prominent star?
- Do any of the stars have a particular colour?
- Are any of the stars double?
- Are there chains, rows, or clumps of stars?
- Are there prominent empty spaces or starless patches?
- Is there a background glow (unresolved stars/nebulosity)?
- How does the cluster relate to the surrounding star field?
- Rate your confidence in this observation.