

Summer 2021

Prairie Sky

Last Quarter		New Moon		First Quarter		Full Moon	
June	2th	June	10th	June	17th	June	24th
July	1th	July	9th	July	17th	July	23rd
July	31st	August	8th	August	15th	August	22nd
August	30th	September	6th	September	13th	September	20th
September	28th						

June
13th Mars 2.8° south of Moon
20th Summer Solstice

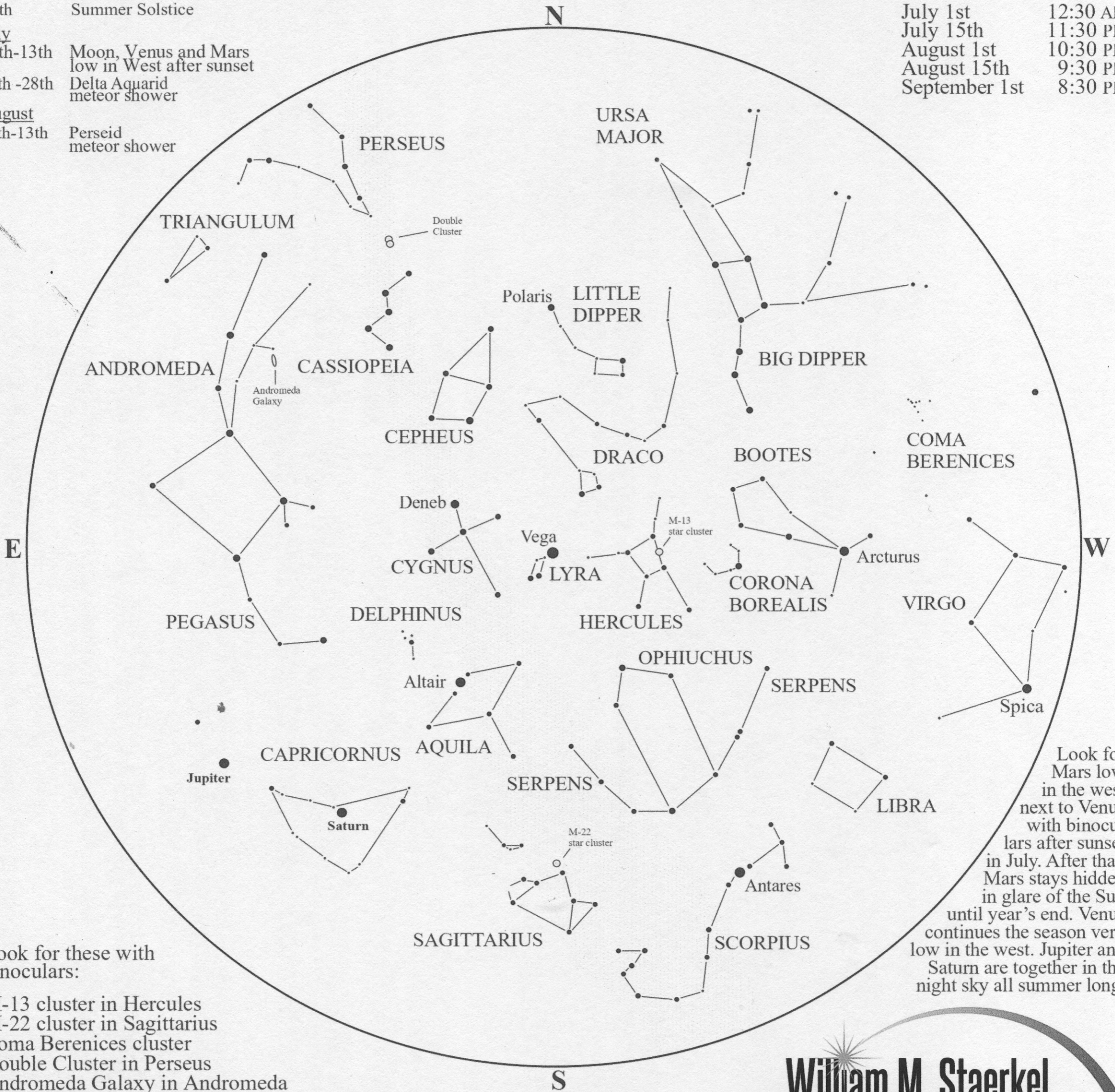
July
12th-13th Moon, Venus and Mars low in West after sunset
27th -28th Delta Aquarid meteor shower

August
12th-13th Perseid meteor shower

September
22nd Autumn Equinox

To use this chart, hold it face-down, above your head, so that the directions match your surroundings.

July 1st 12:30 AM
July 15th 11:30 PM
August 1st 10:30 PM
August 15th 9:30 PM
September 1st 8:30 PM



Look for these with binoculars:

- M-13 cluster in Hercules
- M-22 cluster in Sagittarius
- Coma Berenices cluster
- Double Cluster in Perseus
- Andromeda Galaxy in Andromeda
- Milky Way star clouds visible from clear, rural skies

Look for Mars low in the west next to Venus with binoculars after sunset in July. After that, Mars stays hidden in glare of the Sun until year's end. Venus continues the season very low in the west. Jupiter and Saturn are together in the night sky all summer long.

Autumn 2021

Prairie Sky

New Moon		First Quarter		Full Moon		Last Quarter	
September	6th	September	13th	September	20th	September	28th
October	6th	October	12th	October	20th	October	28th
November	4th	November	11th	November	19th	November	27th
December	4th	December	10th	December	18th	December	26th

September
22nd Autumn Equinox

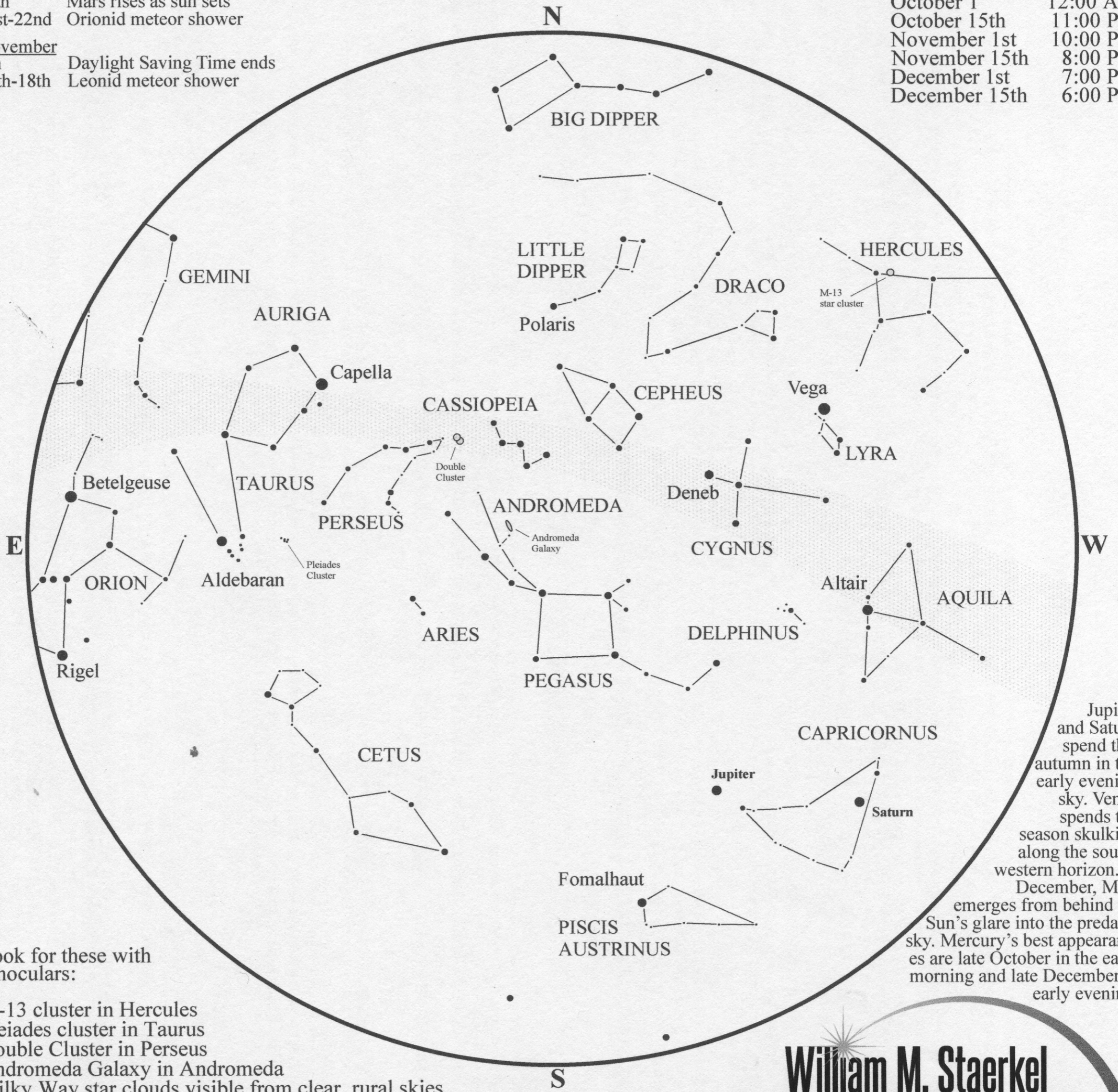
December
13th-14th Geminid meteor shower
21st Winter Solstice

To use this chart, hold it face-down, above your head, so that the directions match your surroundings.

October
13th Mars rises as sun sets
21st-22nd Orionid meteor shower

September 15th 1:00 AM
October 1 12:00 AM
October 15th 11:00 PM
November 1st 10:00 PM
November 15th 8:00 PM
December 1st 7:00 PM
December 15th 6:00 PM

November
7th Daylight Saving Time ends
17th-18th Leonid meteor shower



Jupiter and Saturn spend this autumn in the early evening sky. Venus spends the season skulking along the southwestern horizon. In December, Mars emerges from behind the Sun's glare into the predawn sky. Mercury's best appearances are late October in the early morning and late December in early evening.

Look for these with binoculars:

- M-13 cluster in Hercules
- Pleiades cluster in Taurus
- Double Cluster in Perseus
- Andromeda Galaxy in Andromeda
- Milky Way star clouds visible from clear, rural skies

For Planetarium schedules and more information about the night sky, call the "showline" at 217/351-2446, or check out our website at www.parkland.edu/planetarium

William M. Staerkel
PLANETARIUM

CONSTELLATION INDEX

Abbr.	CONSTELLATION	How to Say it	MAP No.	Abbr.	CONSTELLATION	How to Say it	MAP No.
And	ANDROMEDA	an-DROM-eh-duh	2,3	Hya	HYDRA	HIGH-druh	5,4
Ant	ANTLIA	ANT-lih-uh	4,5	Ind	INDUS	IN-duss	2,6
Aqr	AQUARIUS	ack-KWAIR-ee-us	2	Lac	LACERTA	La-SIR-tah	2,1
Aql	AQUILA	ACK-will-lah	6	Leo	LEO	LEE-oh	4,5
Ara	ARA	A-ruh	6	LMi	LEO MINOR	LEE-oh MY-ner	4,5
Ari	ARIES	A-rih-eez	3,2	Lep	LEPUS	LEE-puss	3,4
Aur	AURIGA	or-EYE-gah	3,4	Lib	LIBRA	LYE-bra: ^{also} LEE-bra	5,6
Boo	BOOTES	bow-OH-tees	5	Lup	LUPUS	LEW-puss	5,6
Cae	CAELUM	SEE-lum	3	Lyn	LYNX	LINKS	4,1
Cam	CAMELOPARDUS	ka-MEL-oh-pard-us	1	Lyr	LYRA	LYE-ruh	6
Cnc	CANCER	KAN-surr	4	Mic	MICROSCOPIUM	my-kro-SKO-pee-um	2,6
CVn	CANES VENATICI	KAY-neeZ Ven-AT-iss-si	5	Mon	MONOCEROS	mon-OSS-err-us	4
CMa	CANIS MAJOR	KAY-niss MAY-ger	4,3	Nor	NORMA	NOR-mah	6
CMi	CANIS MINOR	KAY-niss MY-ner	4	Oph	OPHIUCHUS	off-ih-YOU-kuss	6
Cap	CAPRICORNUS	kap-rih-CORN-nus	2,6	Ori	ORION	oh-RYE-un	3,4
Car	CARINA	ka-RYE-nuh ^{also} ka-REEN-uh	4,3	Peg	PEGASUS	PEG-uh-suss	2
Cas	CASSIOPEIA	kass-ee-oh-PEE-ya	1,2	Per	PERSEUS	PURR-see-us ^{also} PURR-suss	3
Cen	CENTAURUS	sen-TAW-russ	5	Phe	PHOENIX	FEE-nix	2
Cep	CEPHEUS	SEE-fee-us ^{also} SEE-fuss	1	Pic	PICTOR	PICK-torr	3,4
Cet	CETUS	SEE-tuss	3,2	Psc	PISCES	PIE-sees	2,3
Col	COLUMBA	ko-LUM-bah	3,4	PsA	PISCIS AUSTRINIS	PIE-siss ^{oss-TRY-nus}	2
Com	COMA BERENICES	ko-mah bear-en-EYE-sees	5	Pup	PUPPIS	PUPP-iss	4
CrA	CORONA AUSTRALIS	kor-OH-nah ^{oss-TRAY-liss}	6	Pyx	PYXIS	PICK-siss	4
CrB	CORONA BOREALIS	kor-OH-nah ^{bo-ree-ALICE ^{girl's name}}	6,5	Sge	SAGITTA	sah-JIT-tah	6
Crv	CORVUS	CORE-vuss	5	Sgr	SAGITTARIUS	saj-ih-TAY-rih-us	6
Crt	CRATER	KRAY-turr	5	Sco	SCORPIUS	SKOR-pih-uss	6
Cru	CRUX	KRUX	5	Scl	SCULPTOR	SKULPT-tor	2
Cyg	CYGNUS	SIG-nuss	6,2,1	Sct	SCUTUM	SKYOU-tum	6
Del	DELPHINUS	del-FINE-uss	2,6	Ser	SERPENS	SIR-pens	6,5
Dor	DORADO	dough-RAH-dough	3,4	Sex	SEXTANS	SEX-tanz	4,5
Dra	DRACO	DRAY-ko	1,6	Tau	TAURUS	TAW-russ	3,4
Equ	EQUULEUS	ek-KWOO-lee-us	2	Tel	TELESCOPIUM	tell-ih-SKO-pee-um	6
Eri	ERIDANUS	eh-RID-uh-nuss	3	Tri	TRIANGULUM	try-ANGH-gu-lum	3
For	FORNAX	for-NAX	3	UMa	URSA MAJOR	URR-sah MAY-ger	1,5,4
Gem	GEMINI	GEM-in-eye ^{also} GEM-in-knee	4,3	UMi	URSA MINOR	URR-sah MY-ner	1
Gru	GRUS	Grr-rus ^{also} GROOSE	2	Vel	VELA	VEE-lah	4,5
Her	HERCULES	HER-kyou-leez	6	Vir	VIRGO	VER-go	5
Hor	HOROLOGIUM	hor-oh-LO-ji-um ^(like horse)	3	Vul	VULPECULA	vul-PECK-you-lah	6

To 60° South -- SOUTH POLAR CONSTELLATIONS ARE NOT LISTED

MEASURING ANGLES IN THE SKY

David C. Leake

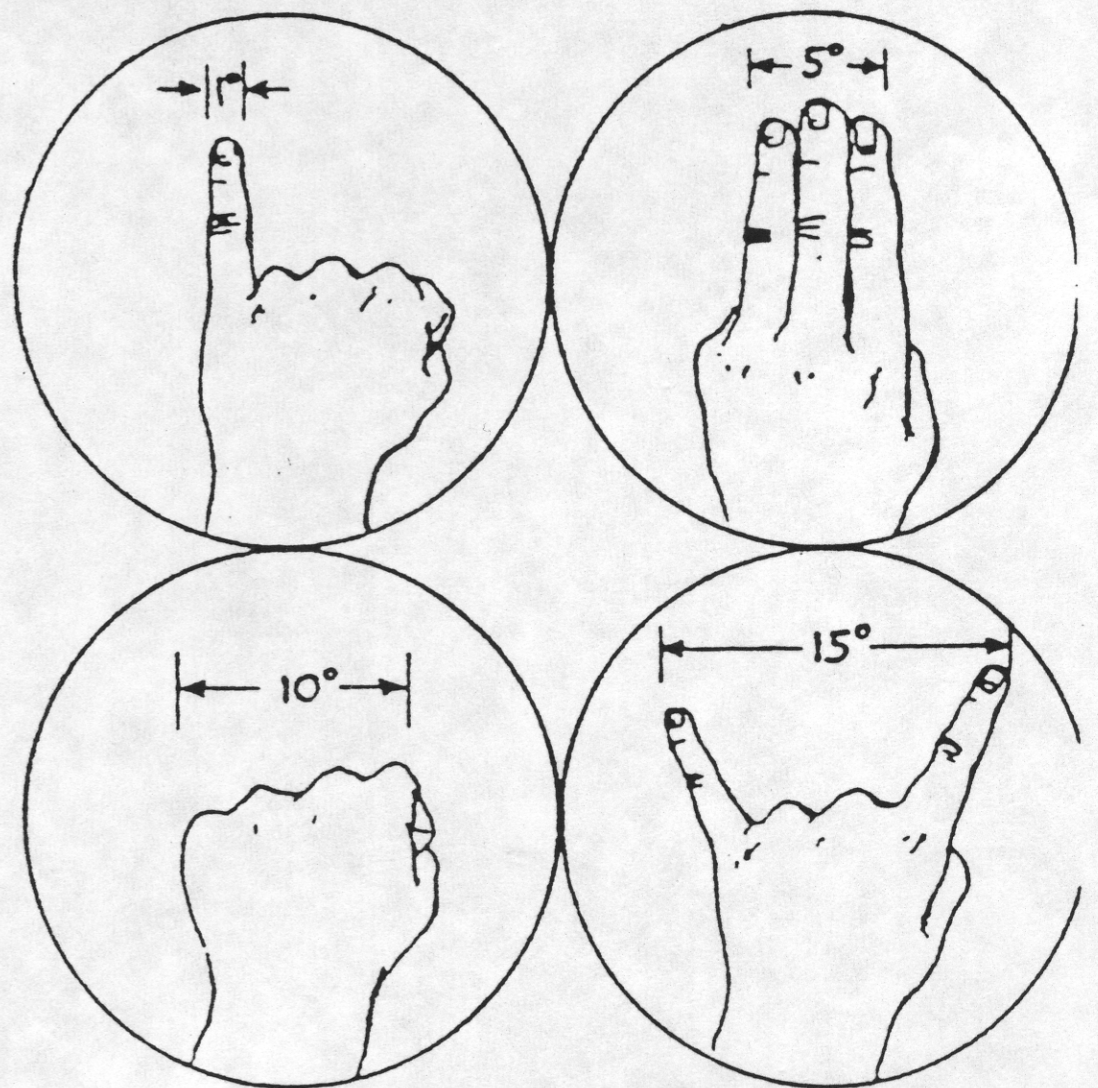
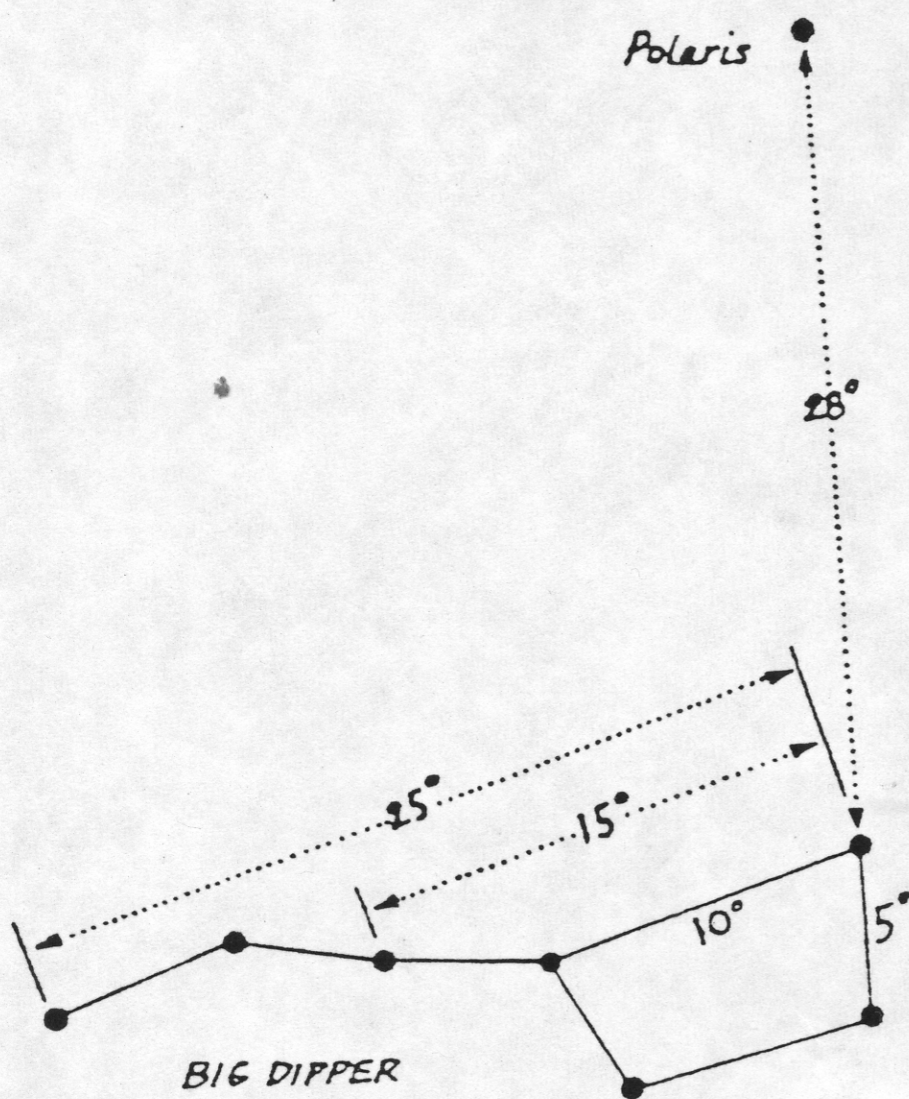
William M. Staerkel Planetarium - Parkland College

Often times, when reading about the stars and planets in the sky above, you will come across statements such as, "the two planets will come within five degrees of each other." How far is that? A "degree" is an angular measurement equal to 1/360 of a complete circle. There are 90 of these degrees in a right angle, for example the distance from the horizon to the point straight overhead; a point called "zenith."

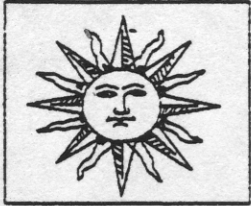
In order to measure angles accurately you need to construct an instrument called a "Astrolabe." A simple device can be constructed with a protractor, a straw, a piece of string, and a weight (nut or bolt?). Tie one end of the string to the reference point of the protractor and the weight to the other end. Mount the straw along the long, flat side of the protractor. As you sight a star through the straw, the vertical string will point to a number on the protractor. This number, between 0-90, will be the star's altitude above the horizon. Try recording the moon's altitude above the horizon at the same time over several nights. What conclusions can you make from your data?

If the Astrolabe is a little too involved for you, you can still measure angles in the sky using the Big Dipper. Note the apparent separations of the stars from the diagram. You may also use your hand to measure angles. Hold your fists at arm's length. Sighting over the knuckles on each end on your fist is roughly 10 degrees. (A person with shorter arms will probably have a smaller fist.) Other configurations are shown. You can use this method to determine separations between planets, the length of the tails of bright comets, or even the length of prominent meteors.

HANDY SKY MEASURES



KEEP ARM FULLY OUTSTRETCHED



"ASTROLABE"

Before the telescope was invented, people used just their eyes to look at the sky. They measured the *angles* between stars and planets or between the ground and a star. You can make many useful measurements just by measuring angles! Angles are measured in "degrees." Let's build an astrolabe!

Directions: Cut out the figure below. It's basically a protractor like those you might have used in school. Attach a straw to the long, straight side with tape. Poke a small hole where the dot is and push a small bit of string through this hole. You only need about 6-8 inches of string. You can tape the string so it stays put. Attach a paperclip to the end of the string – this is just a weight to keep the string hanging down. Sight a star or planet through the straw and have a partner read where the string meets the scale.

