

December Sky

at night

Notes from the
Smoky Mountain Astronomical Society
aka the SMAS



Remember the Zodiac?

Aries

Taurus

Gemini

Cancer

Leo

Virgo

Libra

Scorpio

(Ophiuchus)

Sagittarius

Capricorn

Aquarius

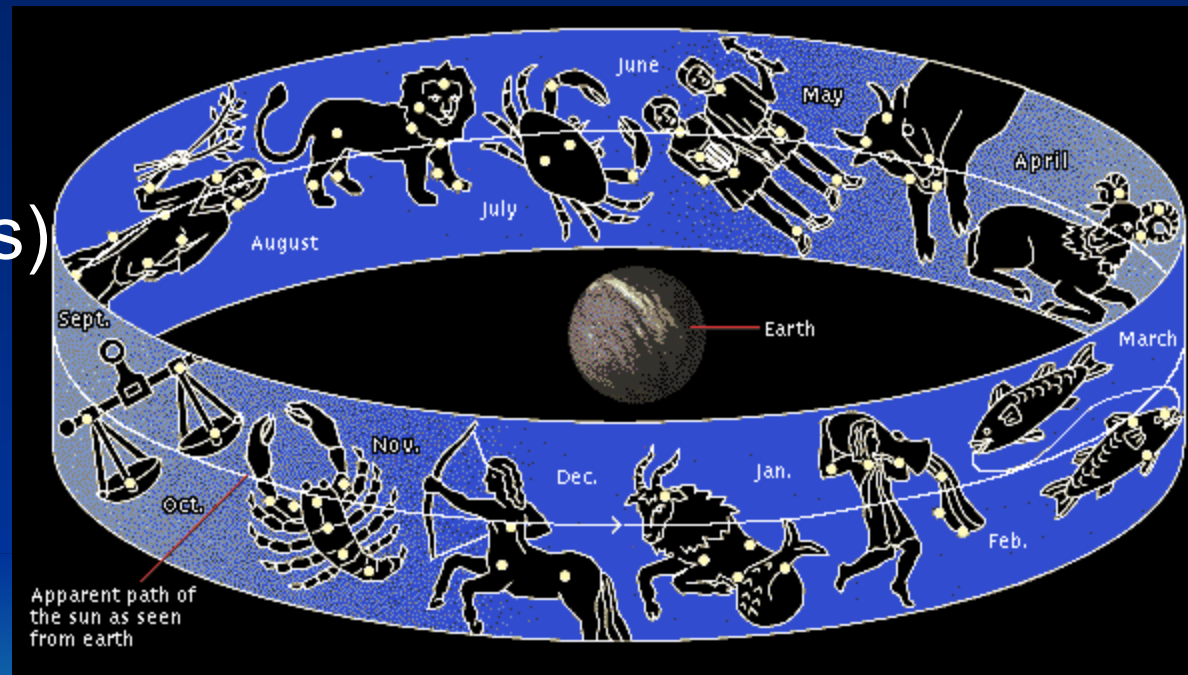
Pisces



How Do We Remember the Zodiac?


The Ramble Twins Crab Liverish; Scaly Scorpions Are Good Water Fish.


Aries	Libra
Taurus	Scorpio
Gemini	(Ophiuchus)
Cancer	Sagittarius
Leo	Capricorn
Virgo	Aquarius
	Pisces





Dates of the Zodiac?


The Ramble Twins Crab Liverish; Scaly Scorpions Are Good Water Fish.


 Aries (Ram): March 21–April 19


 Taurus (Bull): April 20–May 20


 Gemini (Twins): May 21–June 21


 Cancer (Crab): June 22–July 22


 Leo (Lion): July 23–August 22


 Virgo (Virgin): August 23–September 22


 Libra (Balance): September 23–October 23

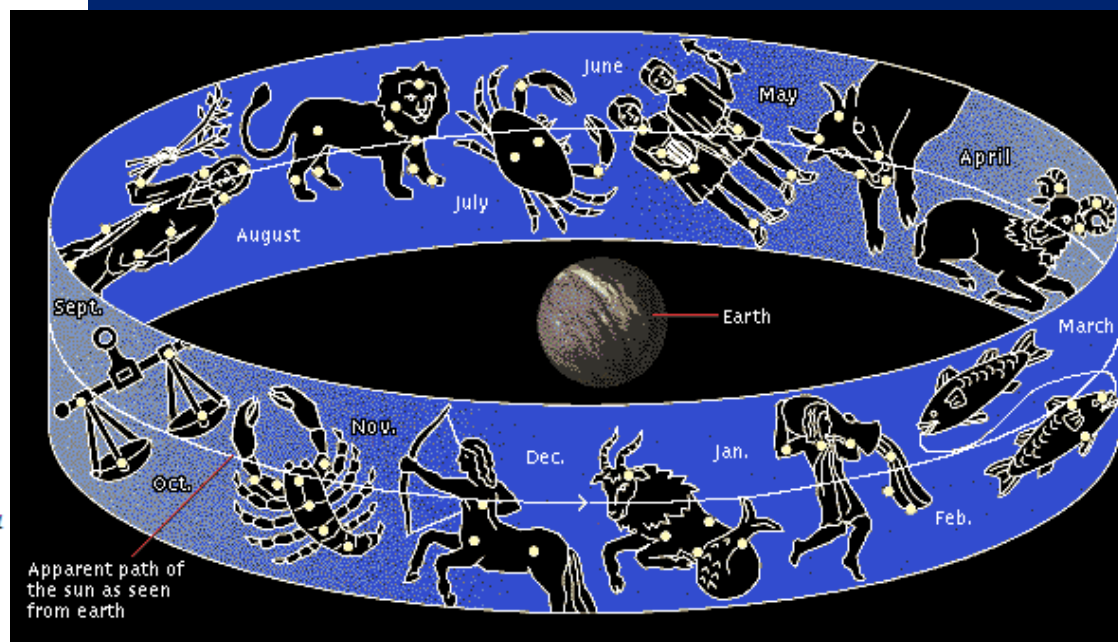
 Scorpius (Scorpion): October 24–November 21

 Sagittarius (Archer): November 22–December 21

 Capricornus (Goat): December 22–January 19


 Aquarius (Water Bearer): January 20–February 18


 Pisces (Fish): February 19–March 20





December Sun is in Zodiac Where?


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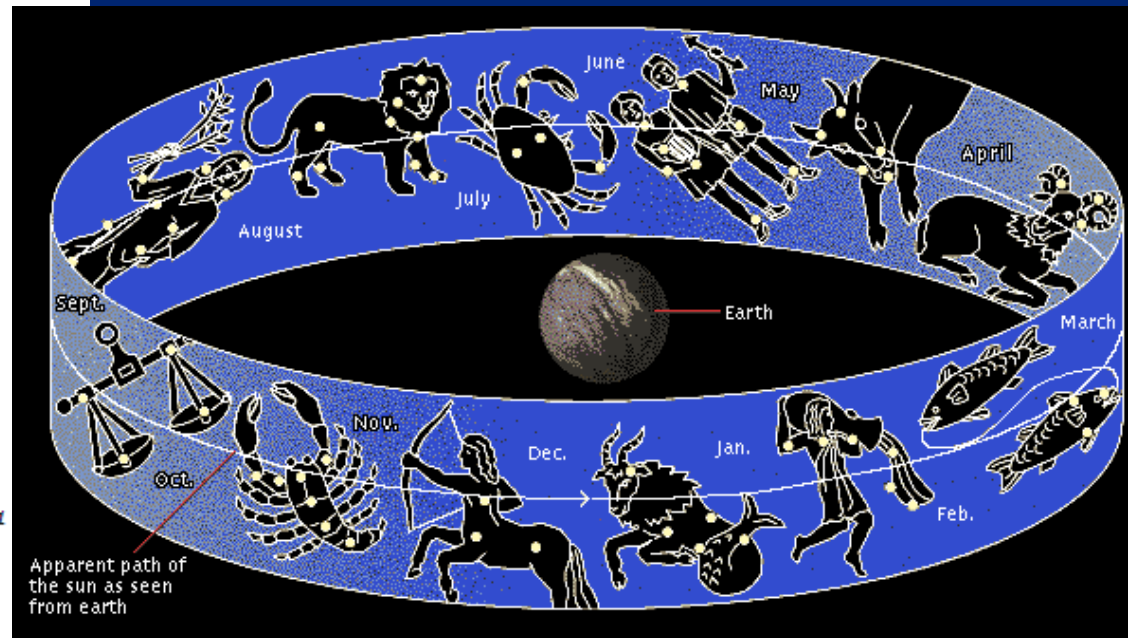
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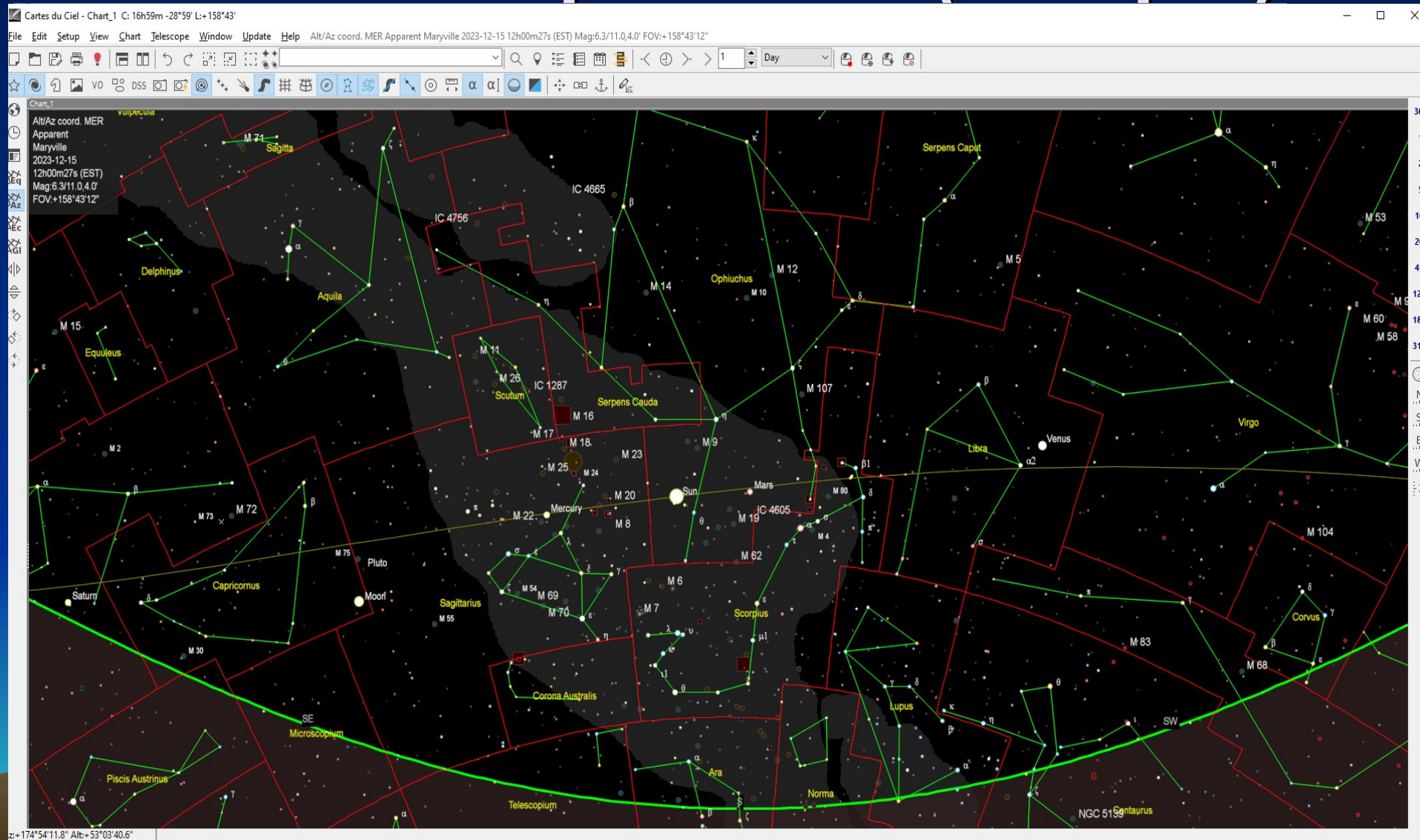
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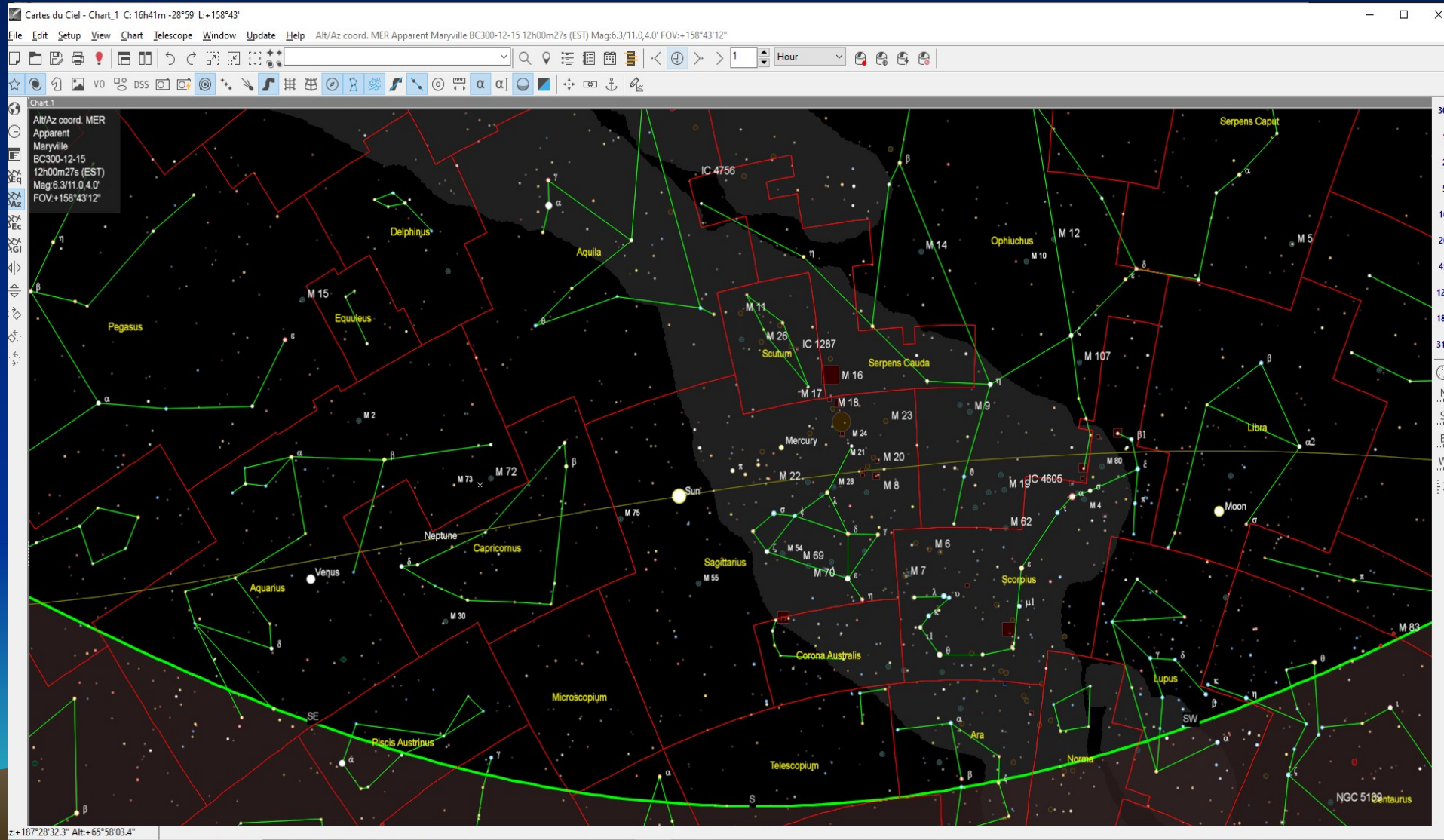
2023 Dates of the Zodiac!

Sun is in Ophiuchus (Scorpio)



300 BCE Dates of the Zodiac!

Sun is in Sagittarius



Reflect Just How Bad Astrology Is.

Not only can Astrologers not predict the future
they **CANNOT** predict the present!

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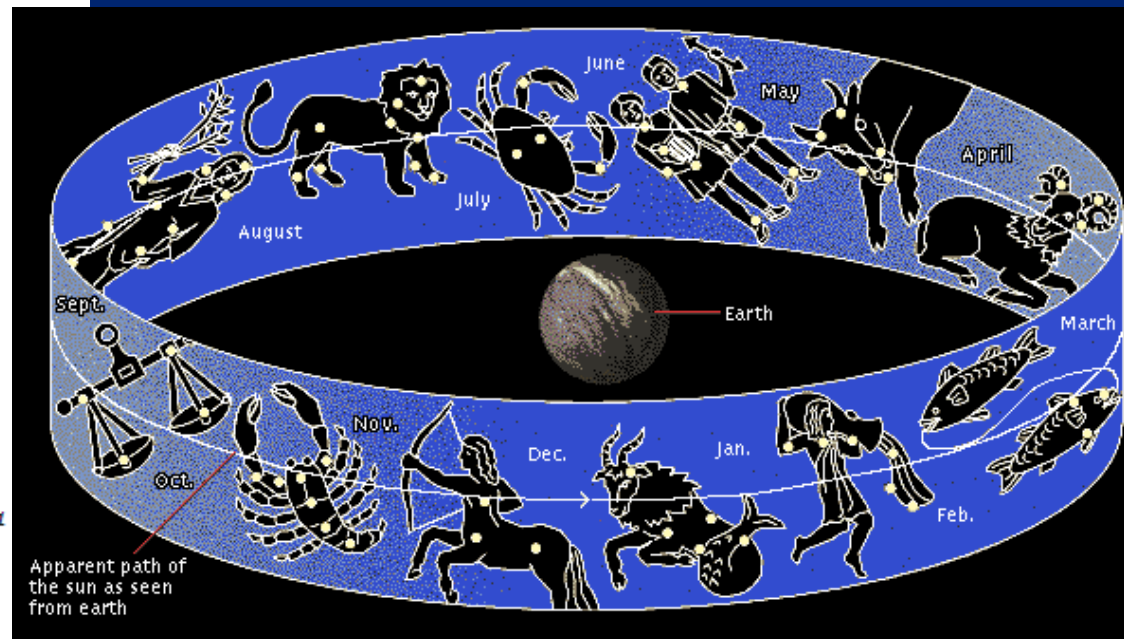
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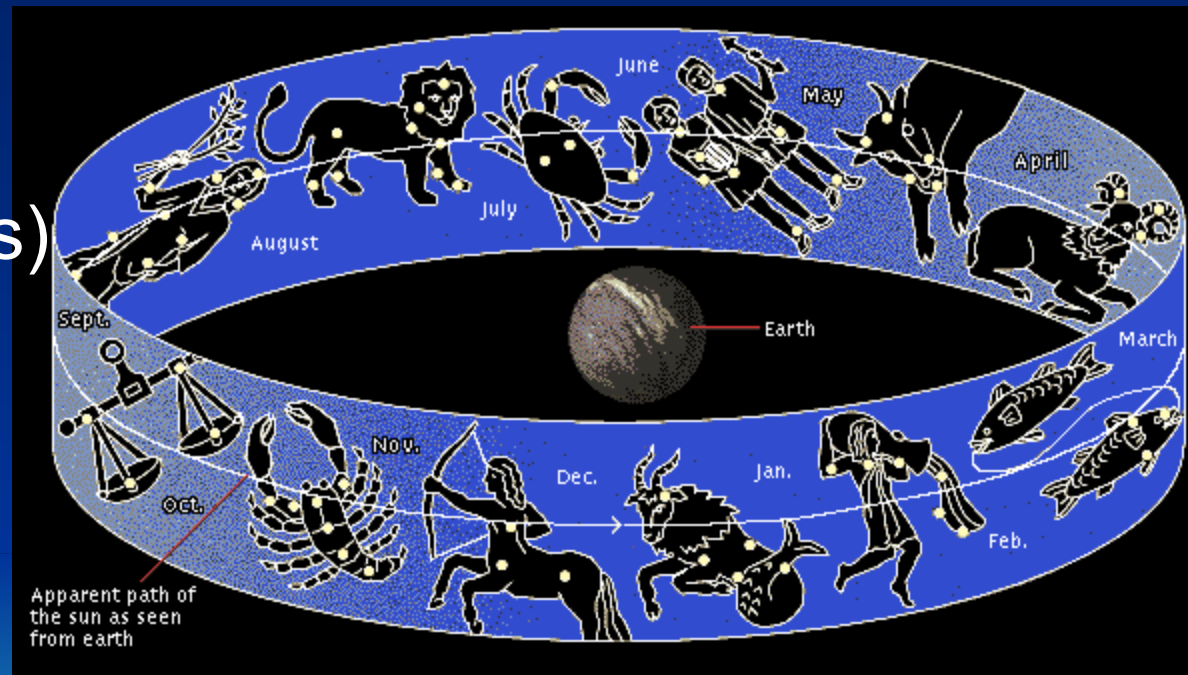


Sun in Libra, What is Night Sky?

At Sunset? At Midnight?

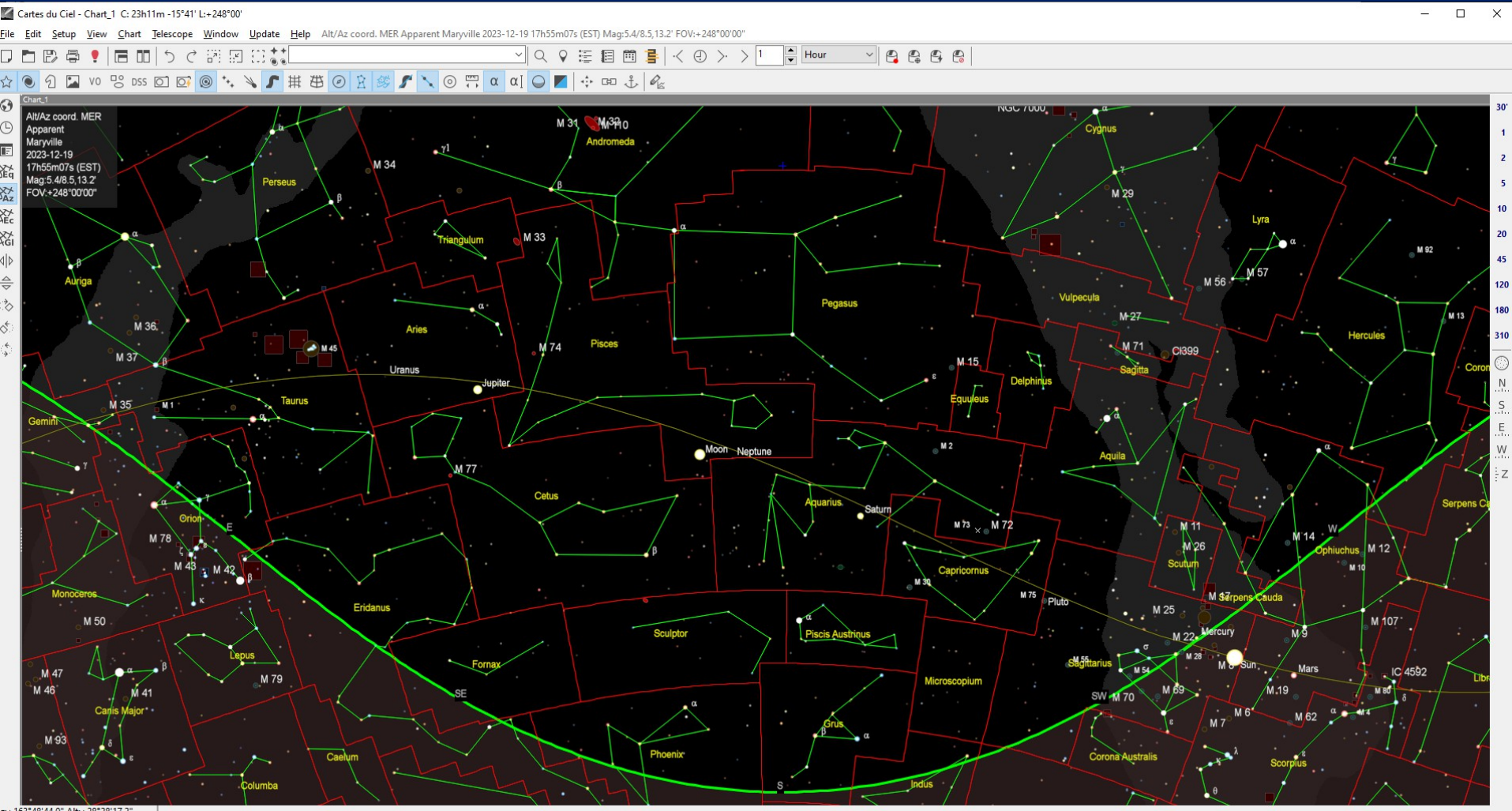
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Leo	Capricorn
Virgo	Aquarius
	Pisces



At Sunset

Aquarius is to the south with Saturn.
Further East is Pisces, Even Further is Aries with Jupiter.



Edmond Mag 5 Atlas

<https://www.texasastro.org/SIG/PDF/Mag5StarAtlas.pdf>

Pegasus

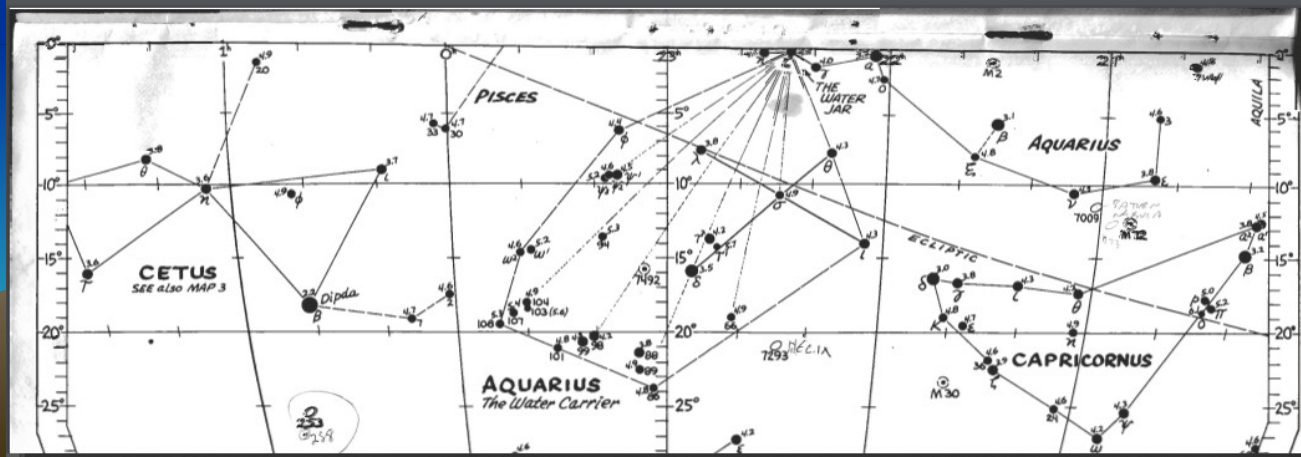
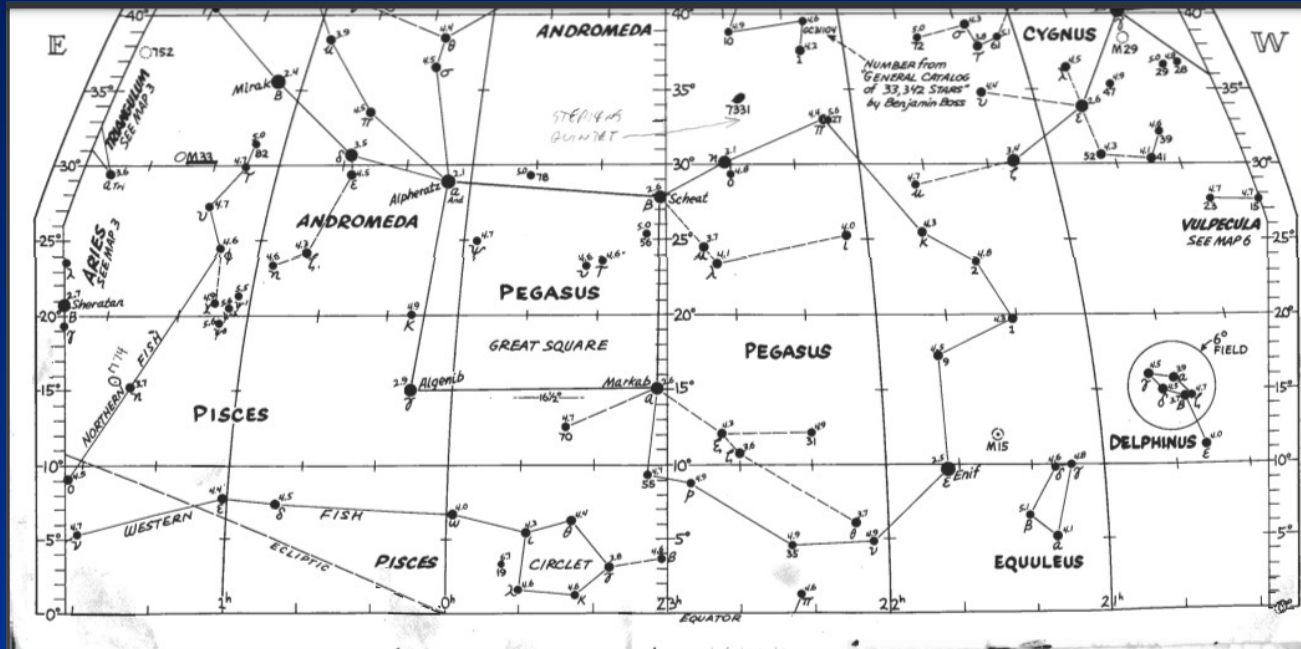
Great square of

Aquarius

South west, busy
with faint
stars

Pisces

Western fish is
south,
Northern fish
is east



Stellarium

Free at: <https://stellarium.org/>

Type: planet

Magnitude: -2.72 (reduced to -2.55 by 1.25 Airmasses)

Absolute Magnitude: -9.40

Mean Opposition Magnitude: -2.70

RA/Dec (J2000.0): 2h15m05.08s/+12°12'21.7"

RA/Dec (on date): 2h16m22.12s/+12°19'02.3"

HA/Dec: 21h52m14.86s/+12°19'34.2" (apparent)

Az./Alt.: +120°58'43.0"/+52°55'47.9" (apparent)

Gal. long./lat.: +152°55'18.6"/-45°44'19.3"

Supergal. long./lat.: -45°47'28.8"/-15°21'22.9"

Ecl. long./lat. (J2000.0): +35°38'32.0"/-1°16'06.1"

Ecl. long./lat. (on date): +35°58'30.5"/-1°15'58.8"

Ecliptic obliquity (on date): +23°26'18.0"

Mean Sidereal Time: 0h08m35.2s

Apparent Sidereal Time: 0h08m34.8s

Rise: 14h37m

Transit: 21h15m

Set: 3h53m

Parallactic Angle: -45°27'41.5"

IAU Constellation: Ari

Hourly motion: +0°00'08" towards 257.4°

Hourly motion: dα=-0°00'08" dδ=-0°00'02"

Elongation: +132°12'13.1"

Elong. in Ecl.Long.: +132°13'33.7"

Phase angle: +8°24'56.3"

Illuminated: 99.5%

Distance from Sun: 4.982 AU (745.283 M km)

Distance: 4.267 AU (638.294 M km)

Light time: 0h35m29.1s

Orbital velocity: 13.131 km/s

Sidereal period: 4331.87 days (11,860 a)

Synodic period: 398.89 days (1,092 a)

Apparent diameter: +0°00'46.21"

Equatorial diameter: 142984.0 km

Sidereal day: 9h55m40.6s

Mean solar day: 9h55m44.0s

Equatorial rotation velocity: 12.568 km/s

Position Angle of axis: +339°34'52"

Center point: L_{IR}=+237°01'52" φ_c: +3°09'20"

Subsolar point: L_{IR}=+228°36'11" φ_s: +3°07'36"

Albedo: 0.51

Solar Az./Alt.: +255°18'55"/-20°17'25"

Lunar Az./Alt.: +229°25'27"/+9°57'15"

X-Orionids

Tau Ceti

Orion

SE

S

SW

W

Date and Time

Date and Time

Julian Day

2023

-

12

-

15

19

:

7

:

20

Earth, +35°41'18", -84°04'36"

FOV 136°

17.9 FPS

2023-12-15 19:07:20 UTC-05:00

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With Art Work!

Jupiter
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Orion
x-Orionids

Capella
Auriga
Cassiopeia
Perseus
Triangulum
Andromeda
Artes
Uranus
Jupiter
Pisces
Cetus
Eridanus
Fornax
Sculptor
Phoenix
Grus
Piscis Austrinus
Capricornus
Microscopium
Aquarius
Saturn
Delphinus
Equuleus
Aquila
Altair
Sagitta
Vulpecula
Cygnus
Lacerta
Cepheus
Lyra
Vega

SE **SW** **S** **W**

Date and Time	
Date and Time	Julian Day
2023 - 12 - 15	19 : 6 : 13

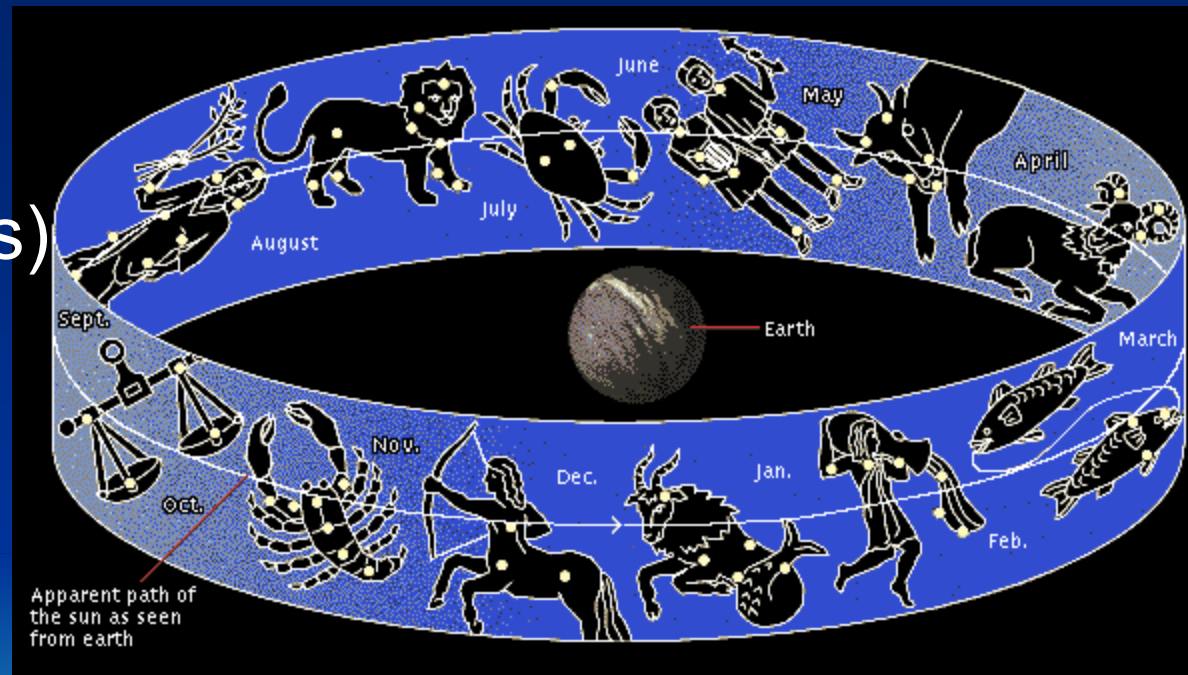
Earth, +35°41'18", -84°04'36" FOV 136° 23.4 FPS 2023-12-15 19:06:14 UTC-05:00

Navigation icons: Home, Previous, Next, Full Screen, etc.

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Review

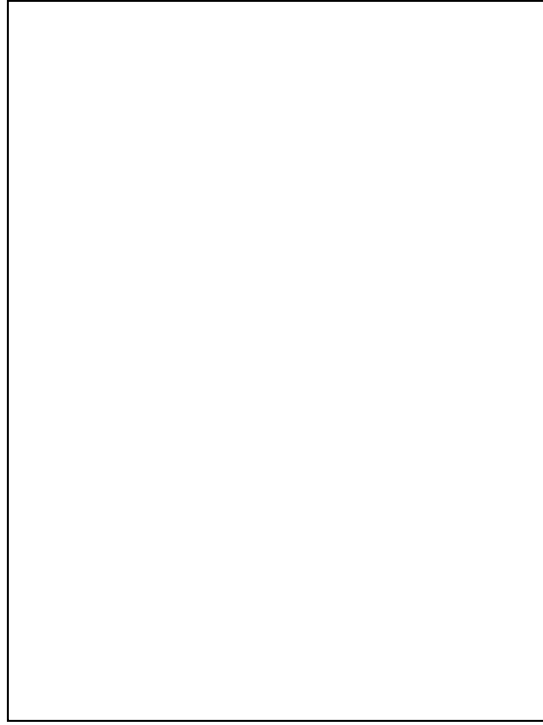
- Flying horse is upside down and facing west.
- Aquarius is under the flying horse a bit west.
- Western Pisces is under flying horse
- Norther Pisces is east of flying horse.



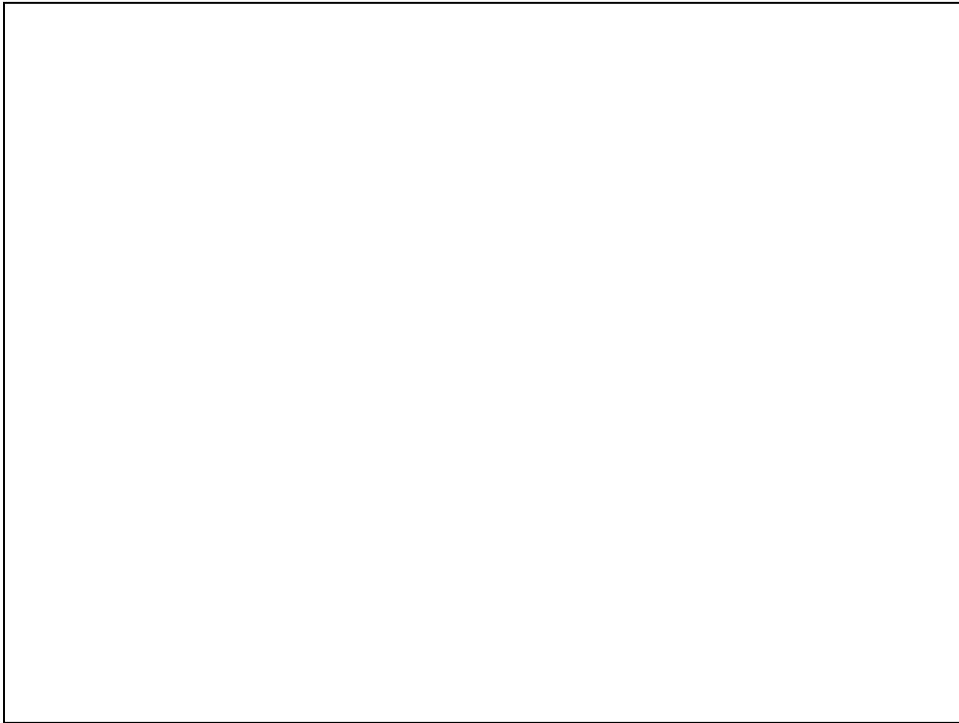
Most Accurate Horoscope

Unless you go out to look,...

<i>Aries</i>	The stars and planets will not affect your life in any way.
<i>Taurus</i>	The stars and planets will not affect your life in any way.
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<i>Capricorn</i>	The stars and planets will not affect your life in any way.
<i>Aquarius</i>	The stars and planets will not affect your life in any way.
<i>Pisces</i>	The stars and planets will not affect your life in any way.



Viewing Total Solar Eclipse of 2017



An eclipse is a general term for when something covers the view to something else. You can find a Bonnie Tyler song with another application of eclipse.

These can happen in the sky and that is what we will be talking about.

There are several kinds of eclipses. They are named inconsistently. Sometimes they are named for the object doing the blocking and some times the object blocked.

We will talk about a few types to with emphasis on the August 21, 2017 total solar eclipse.



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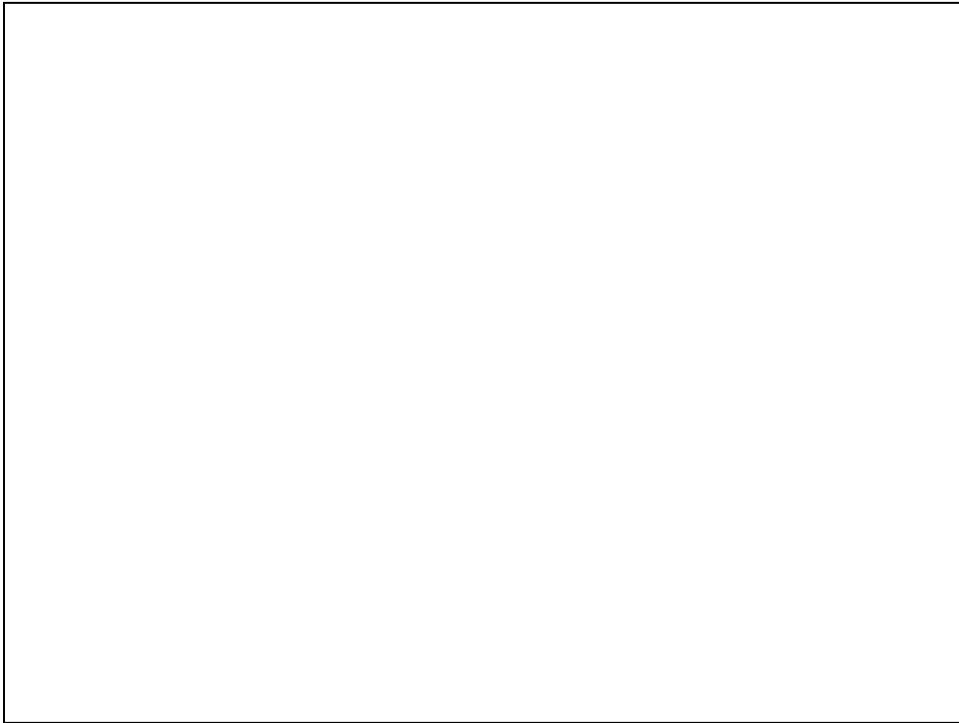


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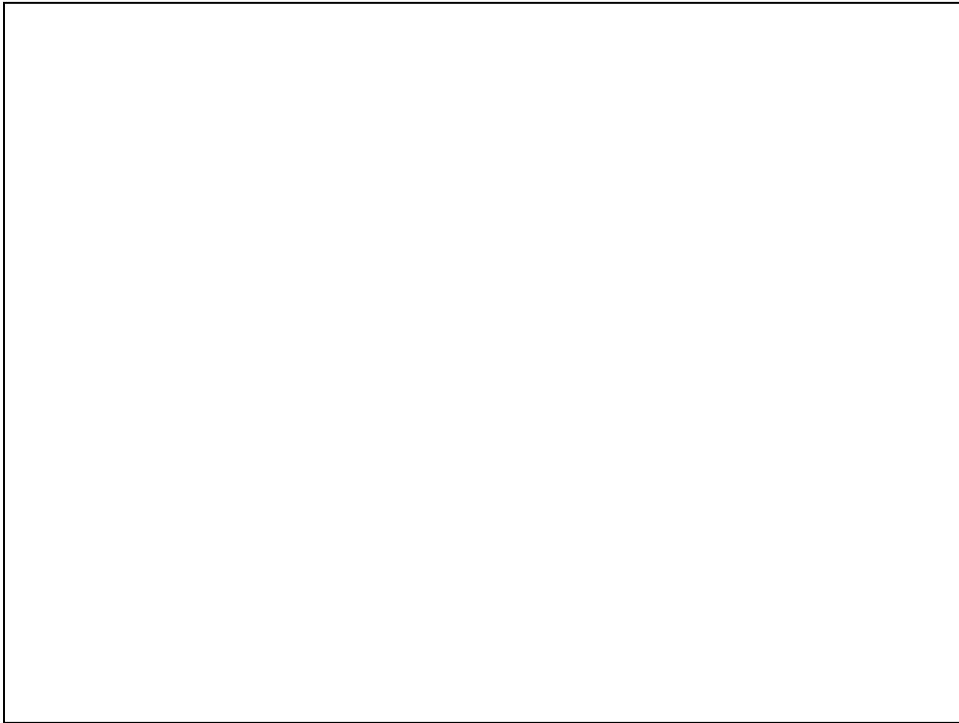


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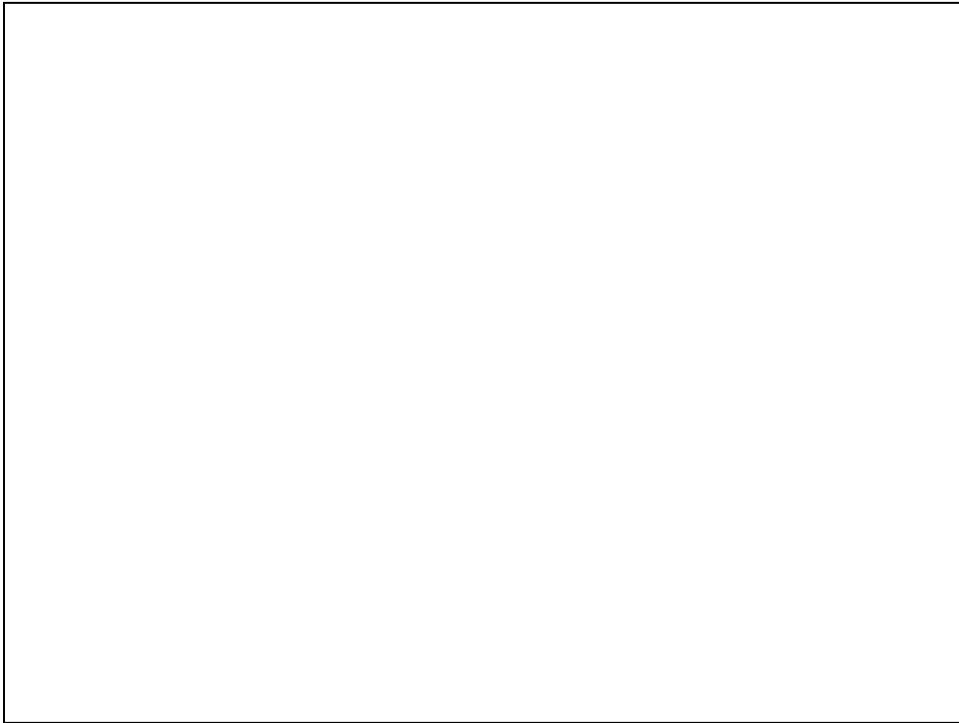


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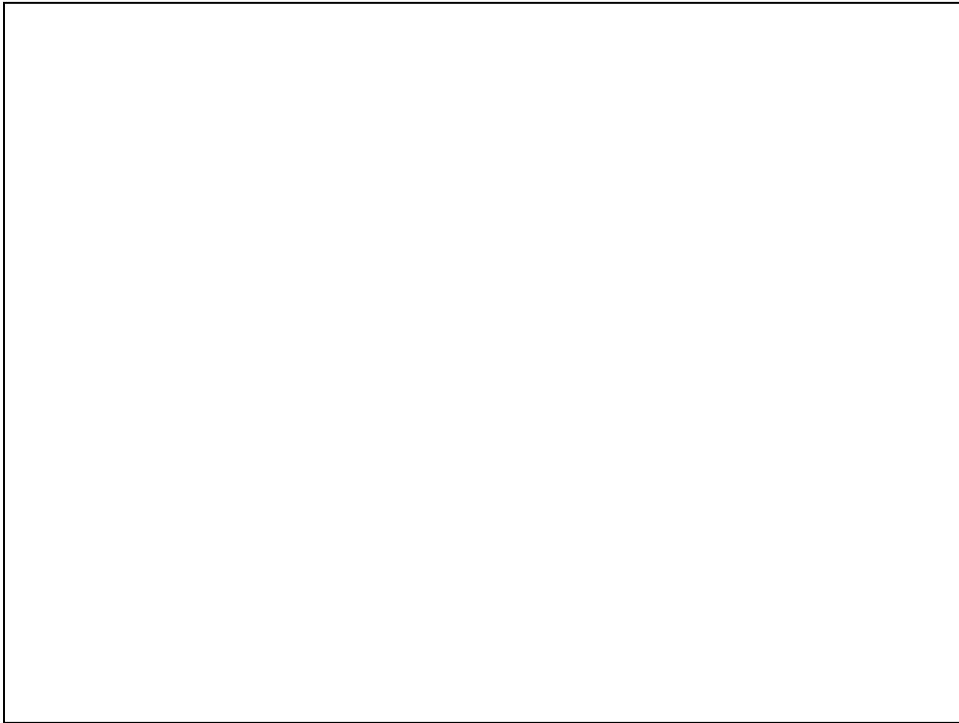


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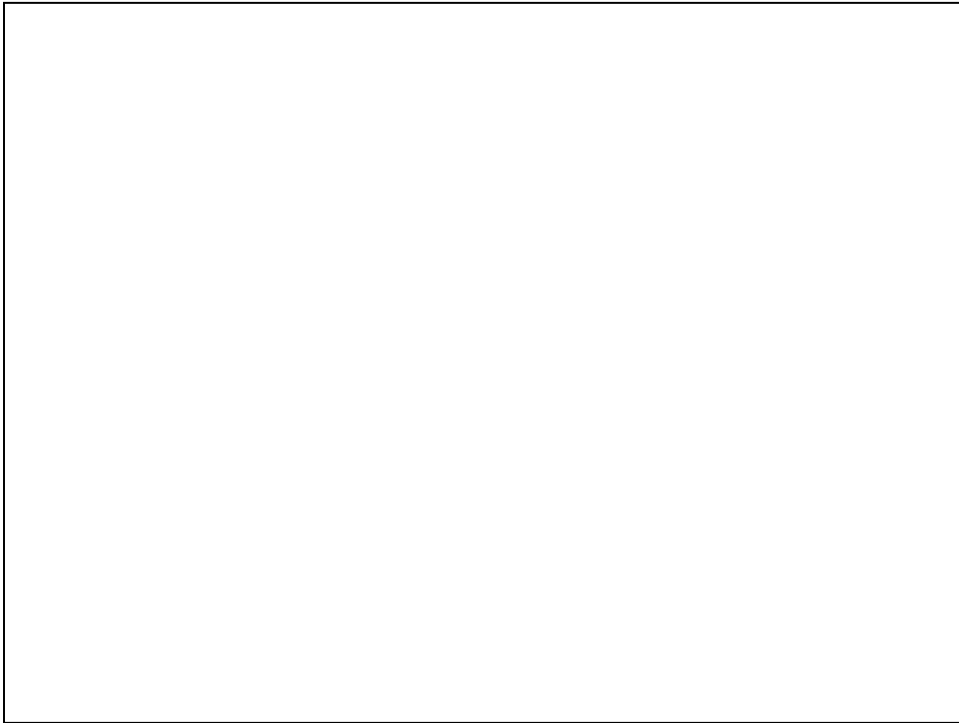


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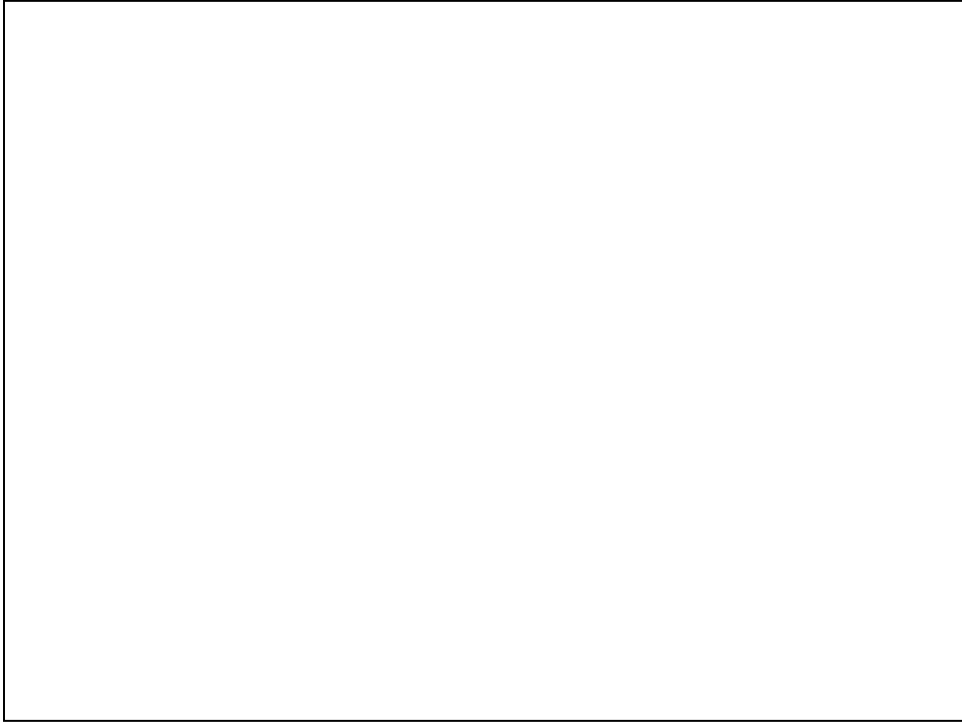


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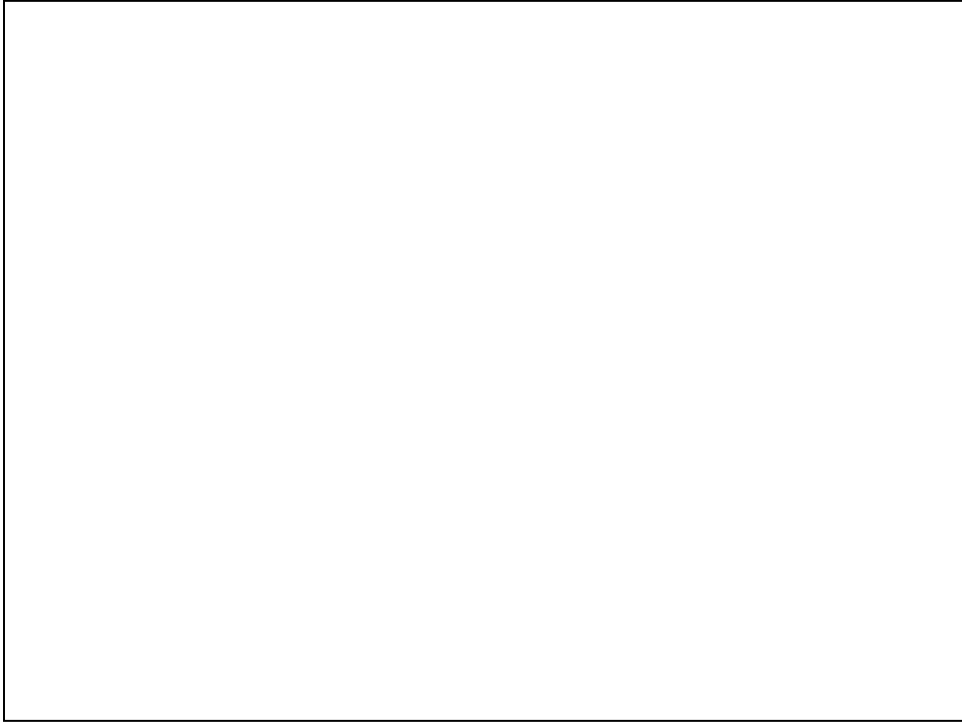


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Any questions?

Have I confused anyone?



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