



Today

- Announcements:
 - The last homework assignment, #11, is due by Wednesday April 16 at 8:00 am
 - Final extra Credit Project – “What was interesting” will be due Wednesday April 23 at 8:00 am
 - Exam #3 is next Thursday, April 24th
- How much can we know?
- Mystics, Astrology, etc.



Are there things beyond science?

- Consciousness?
- Astrology
- ESP
- Ghosts
- Religion – Can we prove or disprove the existence of God (s)?



Electrotelepathy

- Demonstration
- There will be plenty of things we don't understand that will seem like magic.



Astrology

- The study of the influence of the stars goes back to at least 4000 B.C.
- There are Hindu, Egyptian, Chinese and Babylonian versions
- We are most familiar with the Babylonian/Greek version based on a sun sign and location of the moon and planets at the time of a person birth.
- Individual horoscopes older than 400 B.C. have not been found.
- The sky is divided into 12 regions. These correspond to the signs of the zodiac.



Clicker Questions

My opinion of astrology is:

- A). I believe in it and have use it to help make at least one decision in my life.
- B). I believe in it but mostly use it for entertainment.
- C). I am skeptical but think it has some validity.
- D). I don't believe in it at all.



Sun Sign (e.g. Taurus)

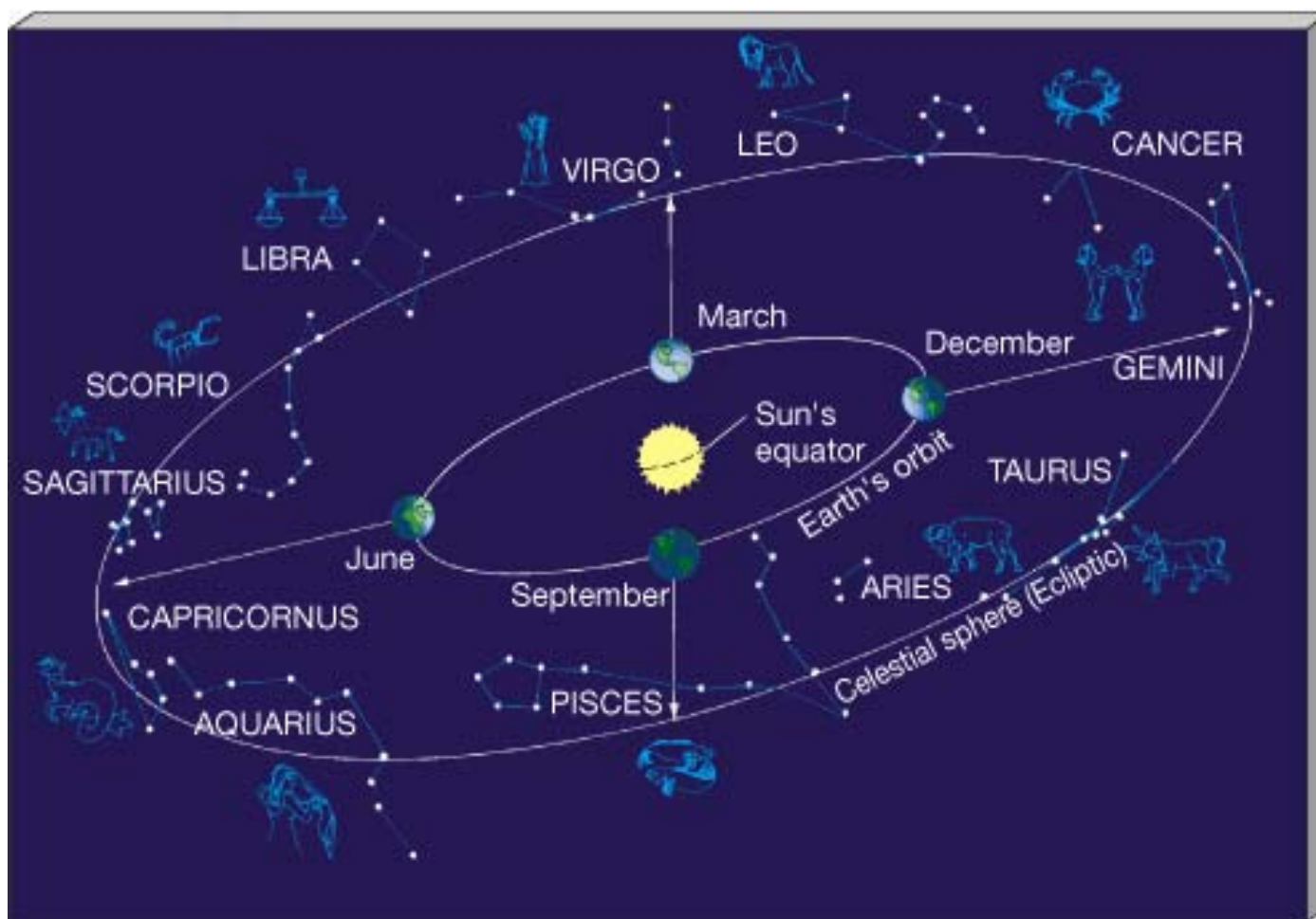
I know what my sign is:

A). True

B). False

C). I don't know if I know

Sun Signs – Zodiac

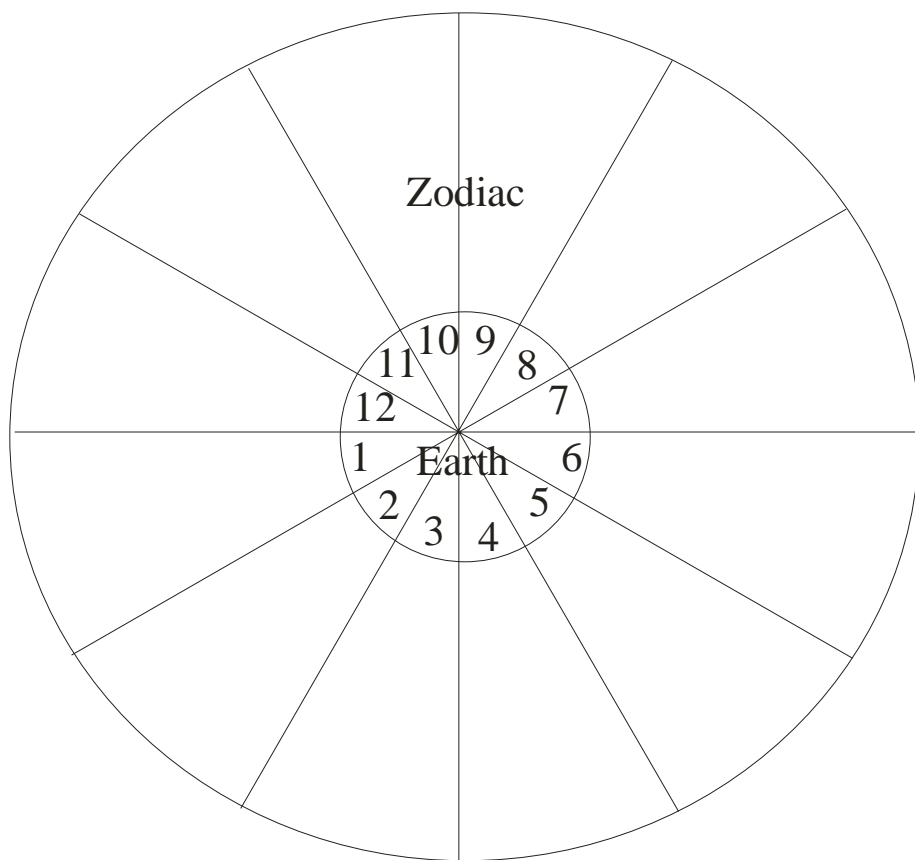


The Disk of Chevroches





A Reading



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

Influences



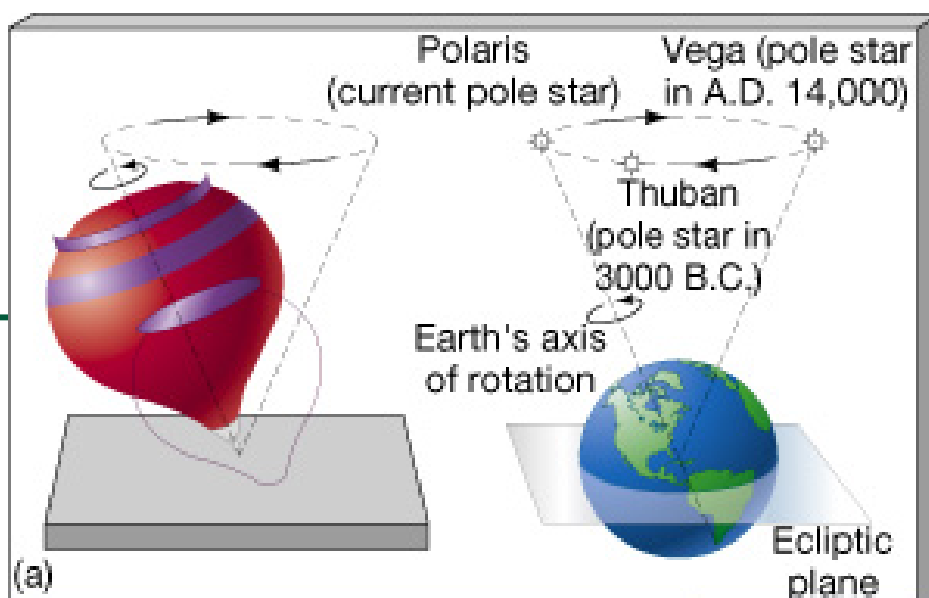


Tropical Zodiac vs Sidereal Zodiac

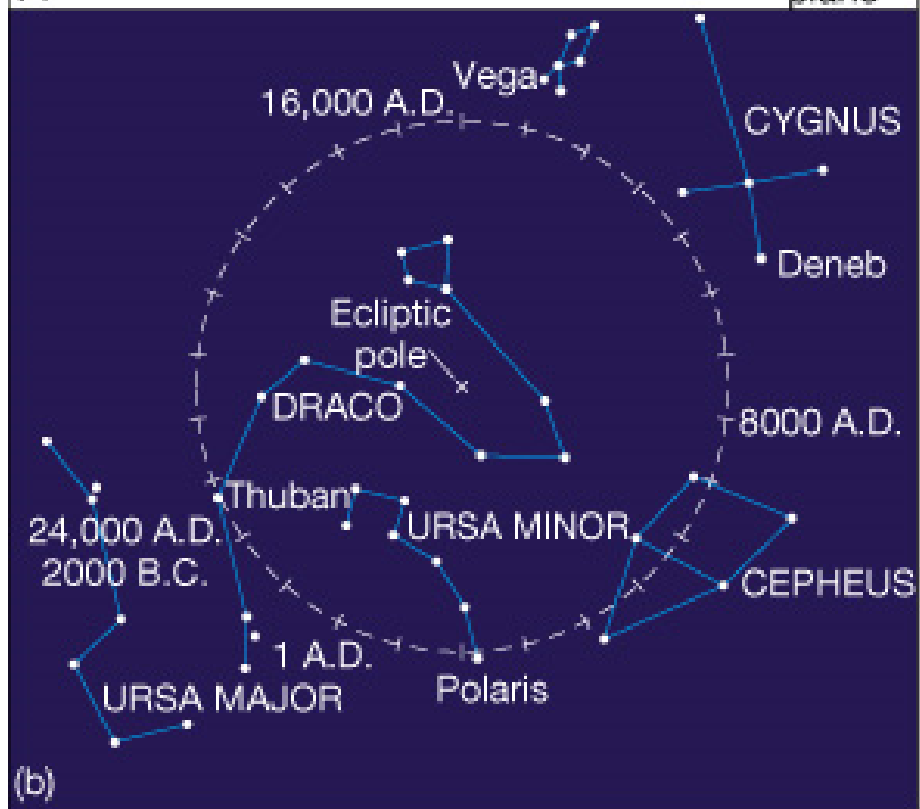
- **The Tropical zodiac** is the one we are familiar with. It
- **The Sidereal zodiac** is used in eastern astrology. It

Dates	Sidereal Sun Sign
15-Apr to 15-May	Aries (Mesham)
16-May to 15-Jun	Taurus (Vrishabham)
16-Jun to 15-Jul	Gemini (Mithunam)
16-Jul to 15-Aug	Cancer (Karkatakam)
16-Aug to 15-Sep	Leo (Simham)
16-Sep to 15-Oct	Virgo (Kanya)
16-Oct to 15-Nov	Libra (Tula)
16-Nov to 15-Dec	Scorpius (Vrischikam)
16-Dec to 14-Jan	Sagittarius (Dhanus)
15-Jan to 14-Feb	Capricornus (Makaram)
15-Feb to 14-Mar	Aquarius (Kumbham)
15-Mar to 14-Apr	Pisces (Meenam)

There is also the conception vs. the birth chart.



(a)



(b)

The Earth is spinning like a big top. The location of the North Celestial pole changes with time. In 16,000 years, Vega will be the “North Star”

This is called **Precession.**



The result of precession

- There are thirteen signs in the current Tropical Zodiac. The 10th sign is Ophiuchus, the Serpent Bearer.
- The current signs don't have the same length, Scorpius for example is only seven days long.
- The first sign of the zodiac isn't Aries it is Pisces.
- Aries does not start on the 21st March, it starts on the 19th April.
- In fact all the 'Tropical signs' are now shifted by almost one whole sign in comparison with Reality.



The response of western astrology

- Western astrology has no connection whatsoever with the stars.
- Instead the important factor is the Earth's cyclical relationship to Sun. The Earth orbits the Sun once a year: it is this cycle which astrologically affects all of us.
- The cycle starts at the Vernal Equinox and this date marks the first date of the sign of "Aries". The sign of "Aries" has nothing to do with the stars of Aries which are in a different place.
- This is the case with all the other "signs" and the stars.
- There are twelve "signs". They are of equal lengths.
- Our relationship with the Moon and planets is not based on the stars.
- Our relationship with the Moon and planets is based on where they appear to lie relative to our orbit around the Sun.



Tetrabiblos – Ptolemy 160 AD

Claudius Ptolemy the 'Father of Classical Astrology' [c 130 - 170 AD] has to say on the subject of the stars and astrology, taken from his master work - and the seminal text of astrology - Tetrabiblos [the Quadpartite Thesis] :

*“As it is next in order to recount the **natures of the fixed stars with reference to their special powers**, we shall set forth their observed characters in an exposition like that of the natures of the planets, and in the first place those of the ones that occupy the figures in the zodiac itself.”*



Possible problems with astrology

- No Study had found a link between time of birth and personality. Essentially all studies find no link between “readings” and a personal description.
- Why birth rather than conception?
- What if a person is born on the Moon, or Mars?
- Why are there so many different versions? A birth chart or a conception chart are different. Which is correct?



An example when astrology could be bad

From the Insurance Journal:

<http://www.insurancejournal.com/magazines/southeast/2005/09/19/features/60506.htm>

Cancer has the highest reported incidence of accidents.

Pisces has the lowest incidence of accidents.

From a Suncorp survey:

Suncorp is a large banking and insurance company in Australia.

Zodiac Drivers From Worst to Best

1. Gemini (worst drivers)
2. Taurus
3. Pisces
4. Virgo
5. Cancer
6. Aquarius
7. Aries
8. Leo
9. Libra
10. Sagittarius
11. Scorpio
12. Capricorn (best drivers)



Astrology plays a role in governments

- Abrupt move of the Myanmar capitol was due to astrology (Boston Globe, 1 Jan 2006)
- Ronald Regan practiced astrology (Nancy would tell staff what days were okay for important meetings)
- Regan changed laws in California to allow astrologers to practice for compensation
- Omarr told the Wall Street Journal that both President Richard Nixon and Henry Kissinger were also "gung-ho" on astrology.



Tests of Astrology

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COMMENTARY

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A double-blind test of astrology

from Shawn Carlson

Two double-blind tests were made of the thesis that astrological 'natal charts' can be used to describe accurately personality traits of test subjects.

28 leading astrologers and about 120 subjects

- People pick their horoscope
- Astrologers pick subjects based on CPI (California Personality Inventory)

Conclusions: people could not pick their CPI; neither could the astrologers



Study of 2000 identical twins

- 2000 twins born minutes apart (time twins) were studied for a period of 40 years. No correlation for up to 100 characteristics was found with astrological predictions
- Journal of Consciousness Studies, Dean and Kelly
"The test conditions could hardly have been more conducive to success . . . but the results are uniformly negative."
- Response: Cusps in the planet placement can cause differences in people born only minutes apart.



Why astrology might appear to work

- Human communication is complicated. All forms of communication are incomplete.
- To communicate we have to be problem solvers and fill in the gaps. We internally try to make sense of statements directed toward us.
 - ✿ Some of your aspirations tend to be pretty unrealistic.
 - ✿ You have a strong need for other people to like you and for them to admire you.
- It is much easier to remember the correct interpretations rather than the incorrect ones.



What lessons should we take from all this?

- Keep an open mind. There are likely many things about the Universe that we don't yet understand.
- Be skeptical. Whether you should leave your house of a given day is probably not written in the stars. It is up to you.
- Self reflection is not bad, but there are plenty of people who would like to make money on it.
- The use of the scientific method can help sort out valid from other approaches.
- “Extraordinary claims require extraordinary evidence.”



One final thought...

- Despite the power of the scientific method, it is only an approach. So far it is our best method to lead toward an understanding of the Universe, but it may not answer all of our questions.
- The scientific method is not a model for how humans should interact
- There are other fields (religion, philosophy, history,..) that are also important to understanding how people fit into nature