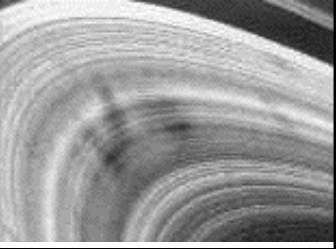


Parallax Lab

- ## Notes
- Solar Labs due
 - Where is good dark spot on campus?
 - "Orbits & Kepler" tutorial as homework
 - Test Thursday—Multiple Choice?
 - Today's plan:
 - Some astro news
 - What's Uraniborg?
 - Review Declination and Right Ascension
 - Revisit Stargazer software
 - Parallax lab

Latest news:

- Nasa probe explores Saturn's rings and moon
- What's its name?



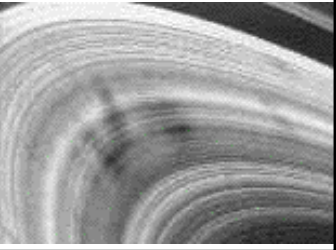
Cassini Studies Saturn's Rings

- Many of the features being observed were predicted by computational models!



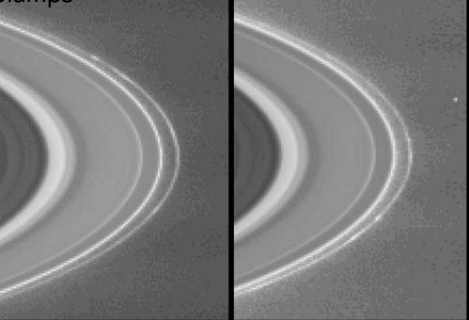
Cassini Studies Saturn's Rings

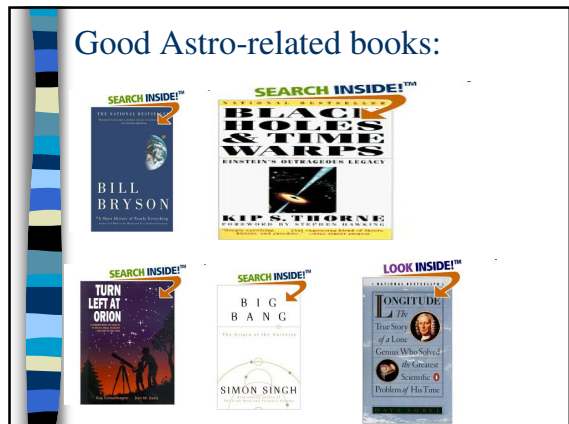
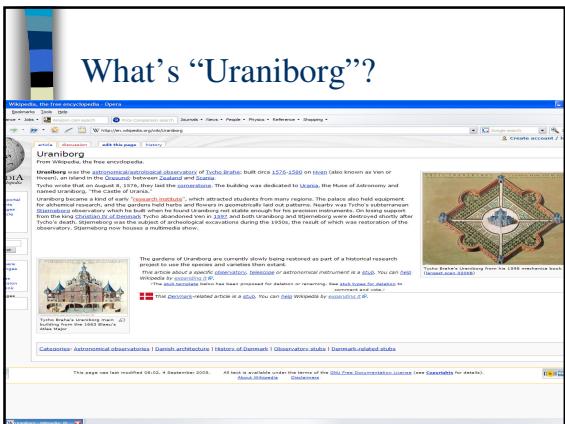
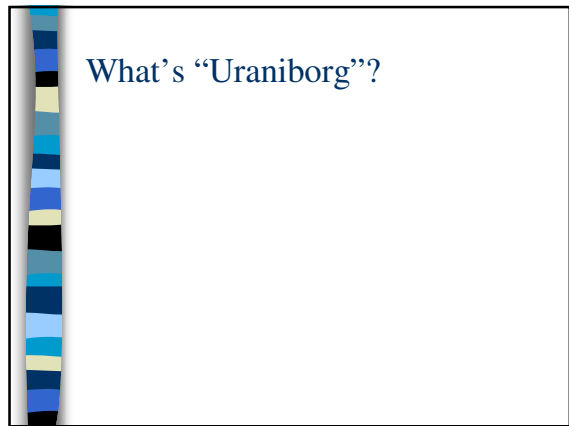
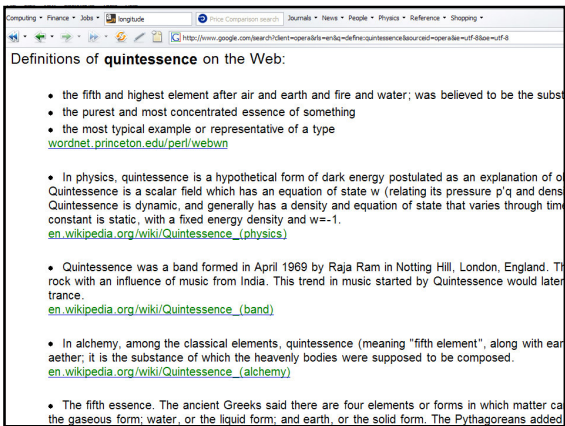
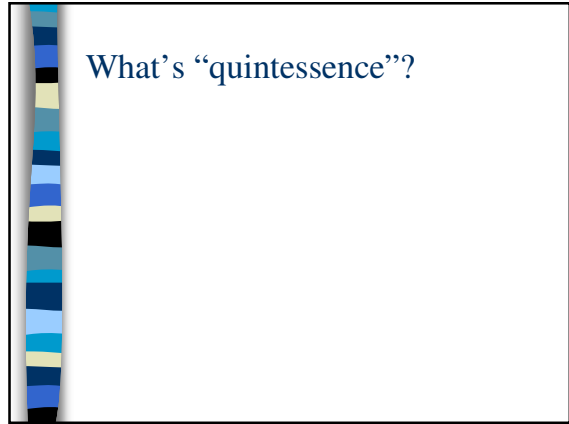
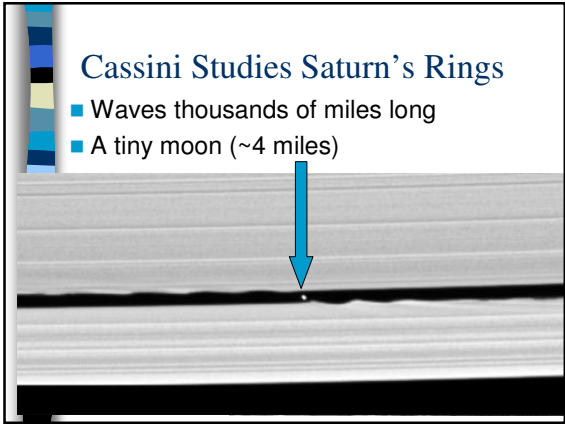
- Spokes--radial structure



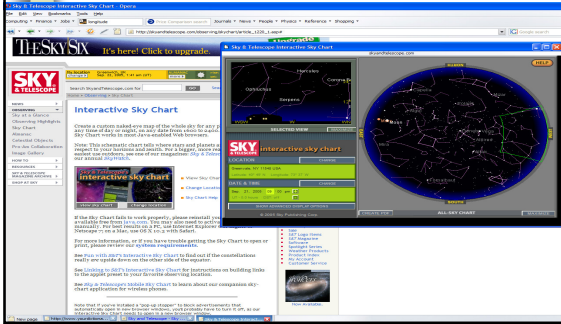
Cassini Studies Saturn's Rings

- Clumps





Sky Charts Available Free Online

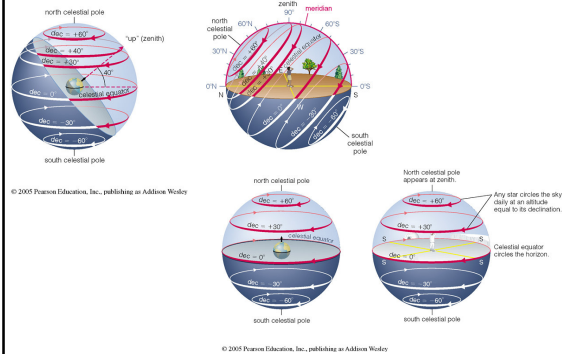


Review Declination and R.A.

Review Declination and R.A.

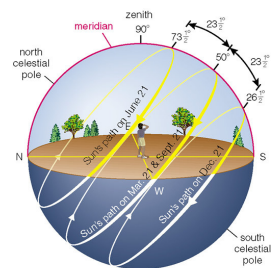
- Which is measured in hours/min/sec?
- What's the other measured in?
- A star rises in East, sets in West with a constant value of which coordinate?
- Where is Polaris in these coordinates?
- **True or False:** Sun's Right ascension is between -23.5 and $+23.5$ degrees
- Using these coordinates, how do you describe the location of celestial equator?

Local Skies



Sun at the Zenith

- The Sun can only be seen at the zenith at noon...
 - from the region between the Tropic of Cancer and the Tropic of Capricorn
 - this only occurs twice per year



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Parallax—Perspective Changes



Parallax—
Measure
Distances

earth (Jan.) A B earth (July) sun star

Parallax—
Measure
Distances

$$\frac{\alpha}{360^\circ} = \frac{B}{2\pi R}$$

$$R = \frac{360^\circ}{\alpha} \frac{B}{2\pi}$$

earth (Jan.) A B earth (July) sun star

Parallax—
Measure
Distances

Just need to
determine the
angle alpha and
then we use
previous equation
to get distance R!

earth (Jan.) A B earth (July) sun star

Parallax—
Measure
Distances

Look for star so far
away, that lines
from A and B
to that object are
parallel

earth (Jan.) A B earth (July) sun star

Parallax—
Measure
Distances

Measure beta
angles to object
relative to these
lines

$$\alpha = \beta_A + \beta_B$$

earth (Jan.) A B earth (July) sun star