Astronomy 105 Lab Policies

- Come prepared!
  - Reading assignment
    (see Calendar on syllabus)
  - Always bring the following to lab
    - pencil, calculator, lab manual
  - Use pencil only, neatness and accuracy important!!
  - Read carefully Classroom Policies in Syllabus
Astronomy 105 Lab Policies

- **Grading**
  - Lab Average = (0.75 x Exercise Average) + (0.25 x Exam)
    - Lab Average is 25% of course grade
    - The same grade will be recorded for both lecture & lab.

- **Absences**
  - A grade of zero is recorded for every *unexcused* absence.
    -- No makeup labs--
  - Roll called at beginning of lab -- Don’t be late!
Astronomy 105 Lab Policies

- Astronomy 105 Lab is **not** a team effort
- Everyone works through the lab exercise individually
- Copying or plagiarism from your neighbors
  - 1\textsuperscript{st} occurrence – 10 points reduction in score
  - 2\textsuperscript{nd} occurrence – zero for the lab exercise
Cell Phone Policy

- Cell phones must be turned off and out of sight
- Students observed using a cell phone will lose 10 points off their daily lab grade – if a second warning is given the daily grade will be zero.
Ast 105 Web Resources

- Lab Home Page
  - Lab Syllabus
  - Night Lab Calendar and Signup
  - Access Lab Grades by CID
  - PowerPoint Slides for Review
  - Lecture Links
Night Lab

- Night-lab Signup
- Meet at the bus stop a few minutes early (See signup web page for bus departure time)
- If cloudy you will need to signup again
- Bring your star chart, Lab Manual, pencil
Next week’s lab - bring a calculator!!!
Lab 01

CONSTELLATIONS – SKY FAMILIARIZATION
The Celestial Sphere

- North celestial pole
- Celestial equator
- South celestial pole
The Celestial Sphere

As seen from Nacogdoches

Zenith

32°

Meridian

Equal to your latitude

32°

South

Horizon

East

North

West

SCP

CE

NCP
Sky Familiarization

- Stars and Constellations Visible
  - Depends on:
    1. Time of Day – Earth’s Rotation
    2. Calendar Date – Earth’s revolution about the sun
    3. Observer’s Latitude
Sky Familiarization

- **Objectives:** Using the SC-1 star chart, for a given date and time
  - Locate the meridian, zenith, and the due east and west points on the horizon
  - Identify stars and constellations visible
North

South

Celestial Equator

Ecliptic

Sun’s Path

Summer Solstice

Ecliptic

Vernal (spring) Equinox

Autumnal (fall) Equinox

Celestial Equator
North

South

Celestial Equator

Ecliptic

Sun's Path

Constellation

Bright Stars

Fainter Stars

Star Names

Declination (degrees)

Right Ascension (hours)

Celestial Prime Meridian

Ecliptic

Summer Solstice

Autumnal Equinox

Greek Letters

Deep Sky Objects
Find the RA and Dec of the star Sirius

RA = 6h 45m
DEC = -17°
April 21 @ 8:00 p.m.

Zenith

32° (your latitude)

Due West on Horizon

Meridian
April 21 @ 8:00 p.m.

Due East
Point Horizon
April 21 @ 8:00 p.m.

Approximate part of the sky not visible at 8:00 p.m.
North
South
East
April 21 @ 8:00 p.m.
Meridian
Zenith
Due West on Horizon
South
April 21 @ 9:00 p.m.

Zenith

Due West on Horizon
April 21 @ 10:00 p.m.

Zenith

Due West on Horizon

North

Meridian

South
January 10 @ 8:00 p.m.

Stars cross the meridian 4 min. earlier each day due to the Earth's revolution.

5 days X 4 min/day = 20 min

January 10 @ 8 pm

January 5 @ 8 pm
Sky Familiarization

- A Few Things to Remember
  - Any vertical line on your SC-1 (north-south) is a meridian.
  - Approximately one half of the stars on the SC-1 are visible at any given time (12 hours of RA).
  - The Earth’s Rotation
    - Stars, the sun, moon, and planets rise and set each day
  - The Earth’s Revolution about the Sun
    - Seasonal Stars and Constellations
Lab Exercise

Classroom Activity

- Sky Familiarization Part 1 on page 5
  Date: March 22 at 8 pm

Use a ruler! Lines should be neat and accurately placed. Print your name on the star chart.
Lab Exercise

- Planetarium Activity
  - Sky demonstration and review
    sky set for today's date
  - Sky Familiarization Part 2 on page 6

Date: March 22 at 8 pm