Everything YOU wanted to know about Teaching High School Astronomy

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Limited Lab Space?

- Most astronomy labs don’t need:
  - Water
  - Chemistry hoods
  - Extensive use of computers

- Most astronomy labs do need:
  - Table space
  - Normal access to electrical outlets
  - Occasional: a way to darken the room
  - Projection system (for those wonderful visuals)
You may already have some equipment for astronomy in your physics or chemistry supplies

- Lenses
- Mirrors
- Rulers/meter sticks
- Gas emission tubes/diffraction gratings
Equipment

- **New supplies**
  - Polystyrene spheres (for phases)
  - Solar motion demonstrators (for seasons)
  - Celestial sphere with horizon ring (one for demonstration)

- **Very few consumables are needed, and are often common supplies**
  - Play-doh
  - Foam-core boards
  - String
  - Drawing compass
Do I need a telescope?

- Probably, yes. But, you don’t need one for each student.
- Dr. Hemenway’s recommendation:
  - One larger telescope for special star parties
    - Estimated cost for 8-inch “go-to” scope = $1500
    - Estimated cost for 8-inch Dobsonian = $300-400
    - Estimated cost for 4-inch Astrosan = $200
  - Several smaller telescopes and/or binoculars
    - Galileoscope = $20
    - Binoculars = $30
    - Tripod = $20
But, I can’t meet at night

- At least once a semester: arrange a star-party at night (perhaps after a school open house or parent meeting). Invite a local astronomy club to bring telescopes and use yours.

- Use your telescopes during the day to view:
  - Sun (with appropriate safety cautions) or specialized telescope
  - Moon
  - Venus

- Option: Use a remote telescope
OK, I want one. How do I choose a telescope?

Picking a telescope is like picking out a new car. Consider your potential needs and price range.

Hints are at:  
http://stardate.org/nightsky/bguide/view.html

Important points:
- Aperture (diameter of lens or mirror) determines light-gathering power
- Eyepieces determine magnification (get at least two)
- Use electricity or not
- Where will you store it and how heavy is it to move?
Remote Telescopes

**Advantages:**
- Often larger aperture
- Often backed by professional staff
- Some daytime access
- Some “observations by order”
- Can involve students in real research
- Processes images that are a permanent record

**Disadvantages:**
- Require good computer access
- Require more training for operation
- Require computers to process the data (images)
Training/Resources

- Workshops at McDonald Observatory
  
  http://mcdonaldobservatory.org/teachers/profdev/

- Webpage for this CAST workshop
  
  http://outreach.as.utexas.edu/marykay/highschool/hs.html
Evaluation

- On one side of the index card write what you will
  - USE
  - SHARE
  - CHANGE
- On the other side, write one sentence about this workshop.