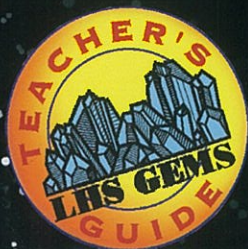
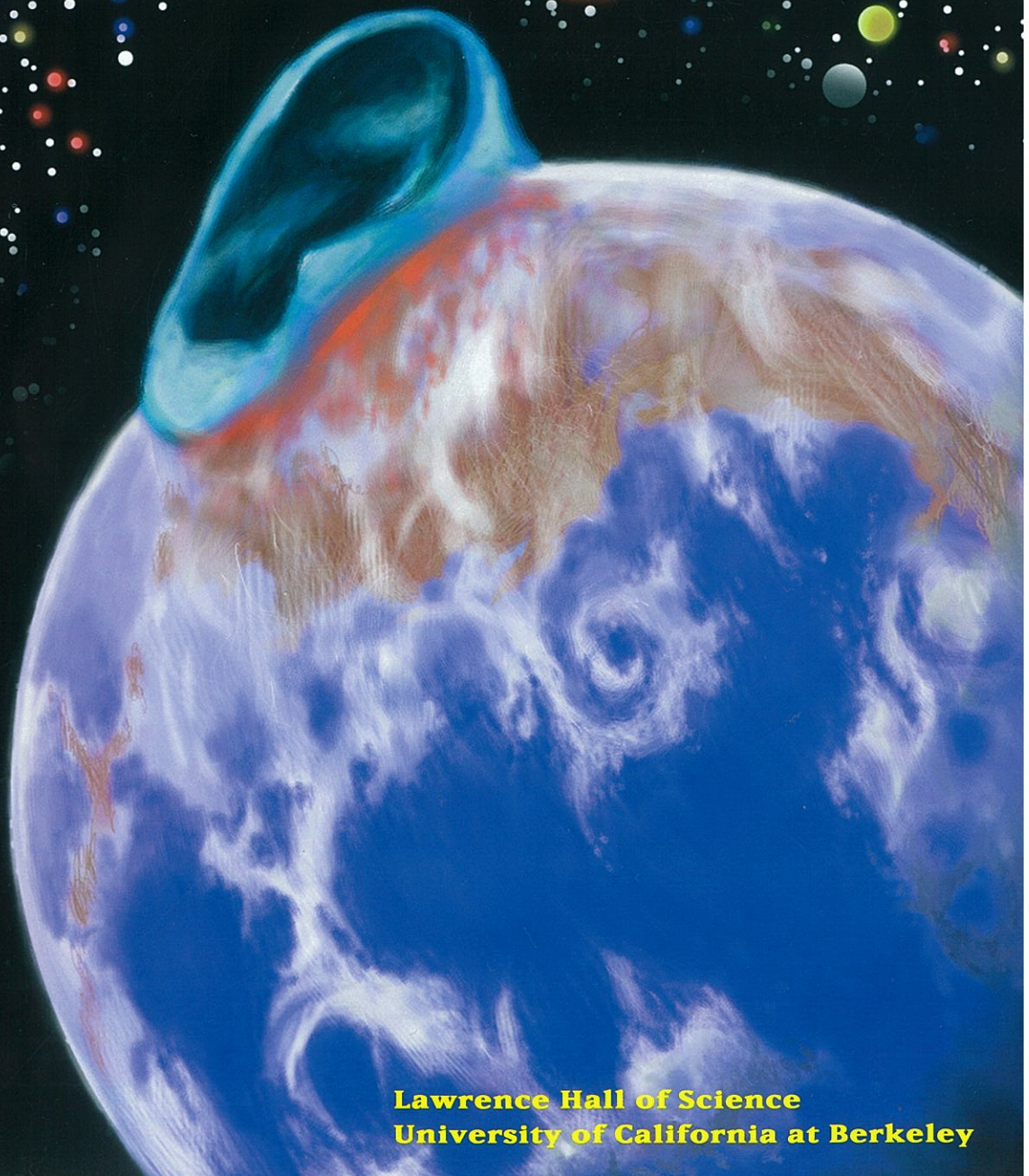


Messages from Space:

The Solar System and Beyond

Grades 5–8



Lawrence Hall of Science
University of California at Berkeley

Activity 1

Session 1

What You Need

For the class:

- items with bar codes printed on them
- (optional) tape player and tape recording of TV or radio static and beep patterns
- (optional) overhead projector and transparency of some article and/or illustration of "ETs" from the tabloids
- (optional) VCR and video clip of message being received from *Contact*, *The Arrival*, or other relevant movie

For each student:

- 1 copy of the A Binary Message student sheet (master on page 14)

Session 2

What You Need

For the class:

- 1 overhead transparency and 1 copy of each of the seven pages of the Message from Space (masters on pages 18–24)
- 1 overhead transparency of the Grid for Message (master on page 25)
- an overhead projector
- some post-it notes for student's comments

For each team of 2–4 students:

- 1 copy of each of the seven pages of the Message from Space (masters on pages 18–24)

Activity 2

What You Need

For the class:

- 4 sockets
- extension cords as necessary
- 8–16 meter sticks with centimeter markings
- 4 light bulbs (See "Getting Ready" for details.)
- an overhead projector

- 1 overhead transparency each of A Spiral Galaxy, Many Galaxies, Star Cluster the Message Came From, and Our Solar System (masters on pages 41–44)
- butcher paper for the Star Types chart
- 3 permanent markers: 1 each yellow, red, and blue
- a clock with a second hand

For each team of 2–4 students:

- 1 radiometer
- 1 copy of the Star Types and Lifezones data sheet (master on page 39)
- 1 copy of the Feeling The Heat data sheet (master on page 40; use this instead of or in addition to the Star Types and Lifezones data sheet. See “Getting Ready” for details.)

Activity 3

Session 1

What You Need

For the class:

- an overhead projector
- the transparency of Our Solar System (from the previous activity)
- water
- finely ground pepper in a shaker
- (*optional*) a poster of the solar system

For each team of 2–4 students:

- 1 flat-bottomed container 3"–5" across (a bowl or a cottage cheese container works well)
- 1 stirring implement, such as a popsicle stick or a spoon
- (*optional*) finely ground pepper in a shaker, if students will be adding their own pepper

Session 2

What You Need

For the class:

- clay
- scissors, tape, and glue
- markers and/or colored pencils
- construction paper
- 1 copy of the Solar System Stations Sign-Up sheet (master on page 58)
- several copies of each of the fact sheets (masters on pages 61–76) for your own reference

- (optional) sample travel brochures from a local travel agency

For each team of 2–4 students:

- 1 large, black garbage bag
- 1 copy of the Solar System Tour Station sheet (master on page 59)
- 2–4 copies of the fact sheet for the astronomical body upon which the team is working

For each student:

- 1 Solar System Travel Brochure sheet (master on page 60)

Session 3

What You Need

For each team of 2–4 students:

- completed assignments from Session 2 of this activity

For each student:

- 1 double-sided copy of the Tour of the Solar System data sheet (masters on pages 79–80)

Session 4

What You Need

For the class:

- the size-model of a solar system object that students made in Session 2 of this activity
- local map (Internet sites such as maps.yahoo.com will create a map centered around your school's address)
- globe or world map
- (optional) a commercial non-scale model of the solar system
- (optional) surveyor's flags or other easily carried, highly visible markers

Activity 4

What You Need

For the class:

- the overhead transparencies of the seven-page Message from Space from Activity 1, Session 2
- 1 overhead transparency of each of the Arecibo, Pioneer, and Voyager messages (masters on pages 93–95; see the note about the Pioneer message in the “Getting Ready” section)
- an overhead projector

For each student or team of 2–4 students:

- 2 pieces of paper
- pencils or other drawing material
- (optional) graph paper

Activity 5

What You Need

For the class:

- the Star Types chart from Activity 2
- 1 copy each of the Red Stars, Yellow Stars, White Stars, and Blue Stars sheets (masters on pages 118–121)
- 1 piece each of red, yellow, white, and blue paper
- 4 envelopes
- the overhead transparency of page 7 of the Message from Space from Activity 1, Session 2
- an overhead projector

For each team of 2–4 students:

- 1 piece of 11" x 17" paper
- 2 pencils
- 1 copy of The Distant Planetary System student sheet (master on page 122)
- 1 strip compass (or tape measure/ruler marked in centimeters)

Activity 6

What You Need

- the ET planetary systems from Activity 5
- 1 copy of the Science Fiction Ideas sheet (master on page 129) per student or team

For each strip compass:

- 1 copy of the Strip Compass student sheet (master on page 123)
- scissors
- glue or glue stick
- 1 pushpin
- a 2" x 18" strip of tagboard (or light cardboard)