chabot space & science center

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Interactive Adventure through Secret World of Imperial Chinese Astronomy Opens July 10 at Chabot Space & Science Center

Ancient artifacts, hands-on activities and a virtual Royal Astronomer tell the fascinating story

OAKLAND, CA (May 28, 2004) — An intriguing interactive adventure through the once highly-guarded world of ancient China's Royal Astronomers is set to open on July 10, 2004 at Chabot Space & Science Center, kicking off a nationwide tour covering seven U.S. cities.

Dragon Skies: Astronomy of Imperial China, a joint venture between Chabot, the National Science Foundation and the People's Republic of China, was developed to enlighten the general public about China's early contributions to the science of astronomy which today remain largely unknown to the lay person. The exhibit incorporates many exciting, hands-on activities as well as authentic astronomical artifacts on loan from the Nanjing Museum to tell the 5,000 year old story of ancient China's astronomical achievements. These include some of the earliest records of solar and lunar eclipses, Halley's Comet and the supernova explosion in 1054 A.D., the remnant of which is the Crab Nebula.

Dragon Skies will showcase 32 artifacts --- some of the world's most ancient astronomical tools --- alongside 13 specially-commissioned interactive exhibits. These hands-on exhibits bring the purpose and function of the artifacts to life, enabling visitors to test the principles of these ingenious devices. Some of the ***interactive highlights,*** particularly well suited for families with children, include:

- **Star Hunt:** Find the stars, measure their positions, and plot a constellation using a simplified version of an armillary sphere (an ancient astronomical tool).
- **The Sky Inside-Out:** From two different vantage points of a celestial globe, view the night sky as it appeared to Chinese astronomers.
- **Match Made in Heaven:** See if you can match a celestial event, such as an eclipse or a comet, to its ancient description.
- **Courtyard of Discovery:** Immerse yourself in a dynamic audio and visual collage, introducing several of the exhibition's key themes.
- **Spheres At-Your-Fingers:** Interactive models of an armillary sphere and celestial globe are available for hands-on exploration.
- **Water Clock:** Use an ancient method to time an event.
- **By the Light of the Sun:** Learn how a sundial works and see if you can tell the time of day.

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- **Ask A Bone:** Ask your own very important question and interpret the cracks in an oracle bone to find the answer.
- **Wheel of Misfortune:** Spin the wheel to find out what misfortunes Chinese astronomers thought comets foretold.

Astronomical observations were of fundamental importance to Imperial Chinese culture because 1) ancient emperors relied on accurate astronomy, particularly the prediction of celestial events, to prove their divine right to rule and their right to the title "the Son of Heaven" and 2) China's agrarian society depended on forecasts of seasonal changes and an accurate calendar to guide agricultural activities. As a result, China's Royal Astronomers kept thorough and systematic records of their observations of the heavens, some of which date back over four thousand years.

In addition to such detailed records, the Chinese developed highly sophisticated astronomical tools. Visitors to ***Dragon Skies*** will have the opportunity to view ancient artifacts such as:

- **Equatorial Armillary Sphere** (2/3 sized replica)
  Built in 1439 CE, this armillary sphere, used to measure the positions of stars, is decorated with four elegant dragons.
- **Suzhou Star Chart Carved on Stone**
  Created in 1193 CE, this star chart was used to tutor a young emperor. It shows over 1,400 stars, the ecliptic, the celestial equator, and the Milky Way.
- **Chinese & Western Star Chart**
  This Qing Dynasty (1644-1911 CE) print from a carved wood star map shows the divisions of the sky in Imperial China.
- **Star Chart on Fan**
  Decorated with a star chart and covered with gold powder, this delicate fan was used in the Ming Dynasty (1368-1644 CE).
- **Bronze Mirror**
  This mirror, created in the Ming Dynasty (1368-1644 CE), is decorated with astronomical images.
- **Four Gods Roof Tiles**
  These decorative ornaments, hung on the roofs of ancient buildings in the Han Dynasty (206 BCE – 220 CE), show the four animal constellations representing north, south, east and west.
- **Record Carved on Oracle Bone**
  China's earliest recordings of astronomical events were found on oracle bones, used during the Shang Dynasty (1700-1027 BCE) for divination. This ox bone replica contains a recording of a lunar eclipse.
- **Record Carved on Tortoise Shell**
  This replica of a 3,000-year old tortoise shell contains one of the earliest recordings of a solar eclipse.
- **Outflow Water Clock**
  This is an example of the earliest form of water clock used in China. It was used in the Western Han Dynasty (206 BCE – 9 CE).

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- **Bronze Water Clock**
  The tapered sides of this Yuan Dynasty (1279 – 1368 CE) water clock makes the change in water level constant over a given period of time, an advancement in the accuracy of water clocks.
- **Bronze Gnomon**
  This small, portable gnomon (shadow calendar), used in the Eastern Han Dynasty (25-220 CE), was used to measure the changes in the length of the sun's shadow and determine the length of a year.
- **Equatorial Sundial**
  This Qing Dynasty (1644-1911 CE) sundial is an example of a common Chinese sundial.
- **Moon Dial**
  By observing the shadow of the moon on this Ming Dynasty (1368 – 1644 CE) moon dial, people could keep time during the night.
- **Su Song's Water Clock Tower**
  Completed in 1092 CE, this intricate water-powered clock combined astronomical observation and timekeeping, including an armillary sphere, a celestial globe, and a complicated series of ceramic figures, which announced the time. This artifact is a working model.
- **Oracle Bones**
  These eight fragments of oracle bones were used during the Shang Dynasty (1700-1027 BCE) to divine the future. The words on them relate to autumn, spring, winter, sun, wind, cloud, mist, and rain.

Dragon Skies: Astronomy of Imperial China will be open July 10, 2004 – January 2, 2005 at Chabot Space & Science Center in Oakland, California. More detailed exhibit information, along with views of artifacts and replicas, can be seen at www.dragonskies.org.

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GENERAL INFORMATION

Chabot Space & Science Center is located at 10000 Skyline Blvd. in Oakland's Joaquin Miller Park. **Public hours**: Friday, 5 pm–10 pm; Saturday, 10 am–10 pm; Sunday, 12 noon–5 pm. **Summer hours (July 5 – Labor Day):** Tuesday – Thursday 10 a.m. – 5p.m., Friday & Saturday 10 a.m. – 10 p.m., Sunday 11 – 5 p.m., closed Mondays.

General admission, including free parking and a Planetarium show, is $13.00 for adults, $9.00 youth and seniors. Children under 3 are admitted free. Shows in the MegaDome Theater are $6.00 adult, and $5.00 youth and seniors. Telescopes are open for Free Public Viewing Fridays & Saturdays from dusk – 10 pm, weather permitting. Tickets may be purchased at the door, or by calling (510) 336-7373.

For more information, call (510) 336-7300, or visit www.chabotspace.org