

Guide to Choosing an Astronomy Model.

Because schools and age groups have different requirements and budgets, different models are available to teach the different aspects of the curriculum. This guide is aimed at helping you choose the right model for you.

Overview of model types

Four types of model can generally be found.

1. Models showing the planets orbiting the Sun. These are usually known as orreries. Key features to look for are:
 - How many of the planets are shown?
 - Does the sun light up (thereby shining light on the planets in a darkened space)?
 - How are the planets moved (manually / motorised)?
 - If motorized, do the planets move at their correct relative speeds?

2. Models focusing on the Sun, Earth and Moon. These are known as telluria and lunaria. Some key features are:
 - The brightness of the sun lamp and extent to which it mimics parallel rays from the Sun (important for getting good demonstrations of day/night, shadows and phases of the moon).
 - The size of the Earth – large to get good shadow depictions.
 - The Moon's orbit – preferably between 12 and 13 times per year and at an angle to the Earth's orbit around the Sun. This angle is why we do not get an eclipse every month.

3. Models showing the stars. The principle features here are the detail of the model and whether it is arranged to represent what is seen from outside the universe or inside it!

4. Model systems showing more than one aspect (e.g. the planets and stars).

Cochranes of Oxford model selection

The following table is a starting point to help choose the appropriate piece of equipment for you. It shows the subjects that can be studied using each model.

Subject	Helios™ Planetarium	Orbit™ Tellerium	Orbit™ Orrery	Scaled Posters of the Planets
Day and night	***	***		
Seasons of the year	**	***		
Shadow movements	***	***		
Phases of the Moon	***	***		
Eclipses	**	***	**	
The solar system	***		***	**
The scale of the solar system				***
Sky at night	***		**	
Zodiacal constellations	***			

*** Principal demonstration ** secondary demonstration

The Helios™ Planetarium

This motorised system gives accurate demonstrations and has multiple arrangements:

1 (pictured). Planets orbit the Sun and the Moon orbits the Earth at their correct relative speeds. The planets can be positioned for any month up to 2020 and tracked forwards and backwards in time.

2. A large Earth globe spins on its inclined axis and the Moon orbits it every 29 days. This arrangement is best for demonstrating the effects of day and night, seasons, phases of the moon and tides.

3. The star dome sits on top of both arrangements.
Size: 36 cm (14 inches) diameter.



The Orbit™ Orrery

For demonstrating the shape and motions of the solar system. The model includes a Sun that lights up with the planets as far as Pluto. The Earth has a moon. The planets can be moved around the Sun by hand, and the Moon around the Earth. Height: 10 cm (4 inches). Diameter of largest orbit (Pluto): 40 cm (16 inches).



The Orbit™ Tellerium

A teaching model of the Sun, Earth and Moon system with a 14 page booklet.

- The bright lamp and 'sunbeam' reflector cast clear shadows on the globe Earth.
- The Moon orbits at an angle to the ecliptic showing why eclipses do not happen every month.
- The model includes two sizes of Earth and Moon, a stick-on man and sundial, an eclipse shadow-card, and a phases-of-the-moon disc.
- The Model is hand-driven, with accurate gears driving the orbit of the moon and maintaining the Earth's axis at 23.5°.
- The Tellerium is 62 cm (24 inches) long and 28 cm (11 inches) high for group viewing.



Posters of the Sun and 9 Planets

A set of laminated posters printed to scale.

Includes physical data about the planets and distances between them at the scale printed giving a real feel for the scale of the universe.

Poster sizes: heights - planets 30 cm (12 inches), Sun 49cm (19 inches), widths - various.

