

SOLAR SYSTEM PLANETARIUM

⚠ WARNING:
CHOKING HAZARD – Toy contains small parts and small ball.
Not for Children under 3 years.

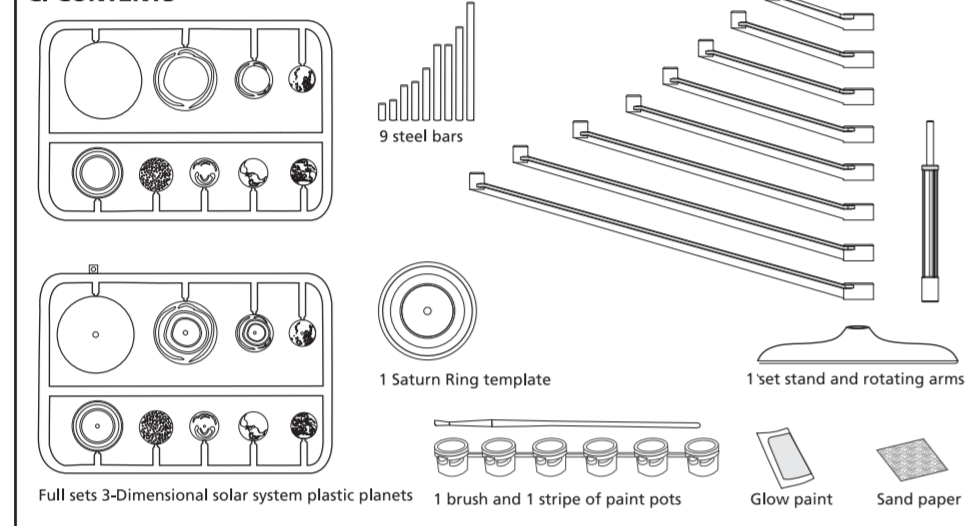
A. SAFETY MESSAGES

1. Please read through these instructions before you start.
2. Intended for children of ages over 8.
3. Adults assistance and supervision required.
4. This kit and its finished product contain small parts and small balls which may cause choking if misused. Keep away from children under 3 years old.

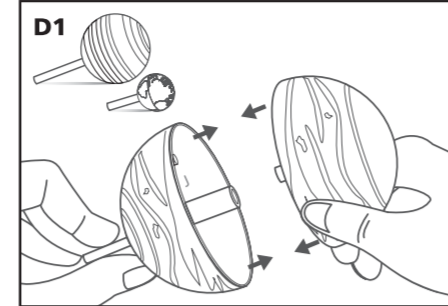
B. OTHER ATTENTIONS

1. Since there are lot of pieces included in this kit, it is recommended that you only detach the plastic pieces from the holding frames when they are needed. This will help to keep the pieces in place.
2. Detach the plastic pieces from the frame with care. You may further polish the detaching points with a nail clipper and sand paper. This will smoothen most uneven edges, facilitating an easy assembling.
3. Always work on a solid, level working surface and try to keep the area neat and clean.
4. If clothes are stained by paint then wash immediately. Dried paint may leave mild stains on clothing even when they are washed. Put on your apron or wear old working clothes as necessary.
5. This is only an inspirational science craft. Due to the requirement of balancing and the limitation of the desk model size, the proportion of the planet sizes and distances could not reflect the real proportion of the Solar System.

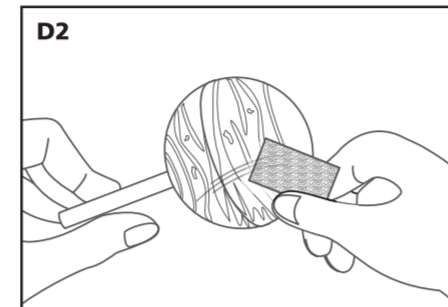
C. CONTENTS



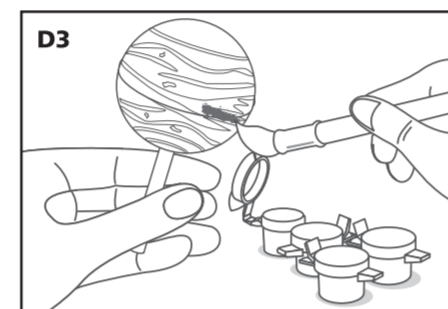
D. INSTRUCTIONS



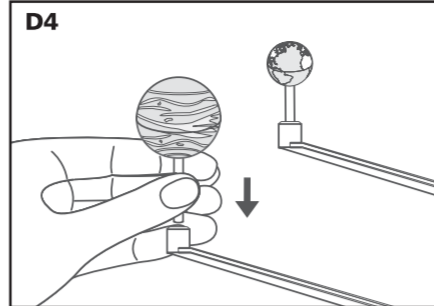
Snap the corresponding hemispheres together. (Remark: For Saturn, you need to insert the ring template in between the two hemispheres.) Their names are embossed on the plastic frame holding them. There are also abbreviation letters embossed inside the planets. Check the abbreviations in the diagram D5. They are in brackets next to the full names.



Before you start painting, use the sand paper provided to sand the surface. The paints apply better on coarse surfaces.



Paint the planets, refer to the package for ideas or see section following for more painting tips.



Insert the steel bars to the corresponding arms. (Remark: Name of the planets are also embossed on the arms)

PAINTING TIPS

Use your own colour scheme or refer to the illustration as shown on the package. For best results apply more than one layer of paint but wait until the first layer is dry before applying a second coat. It is always easier to paint a darker colour on a lighter colour background than the reverse. You may also add a small drop of dishwashing detergent to the paint and mix it. This will help the paint apply on the surface better (especially for plastic surfaces). Follow the colour mixing guide below to produce more colours. (Some of the following guides may not apply to your kit if the required colours are not included)

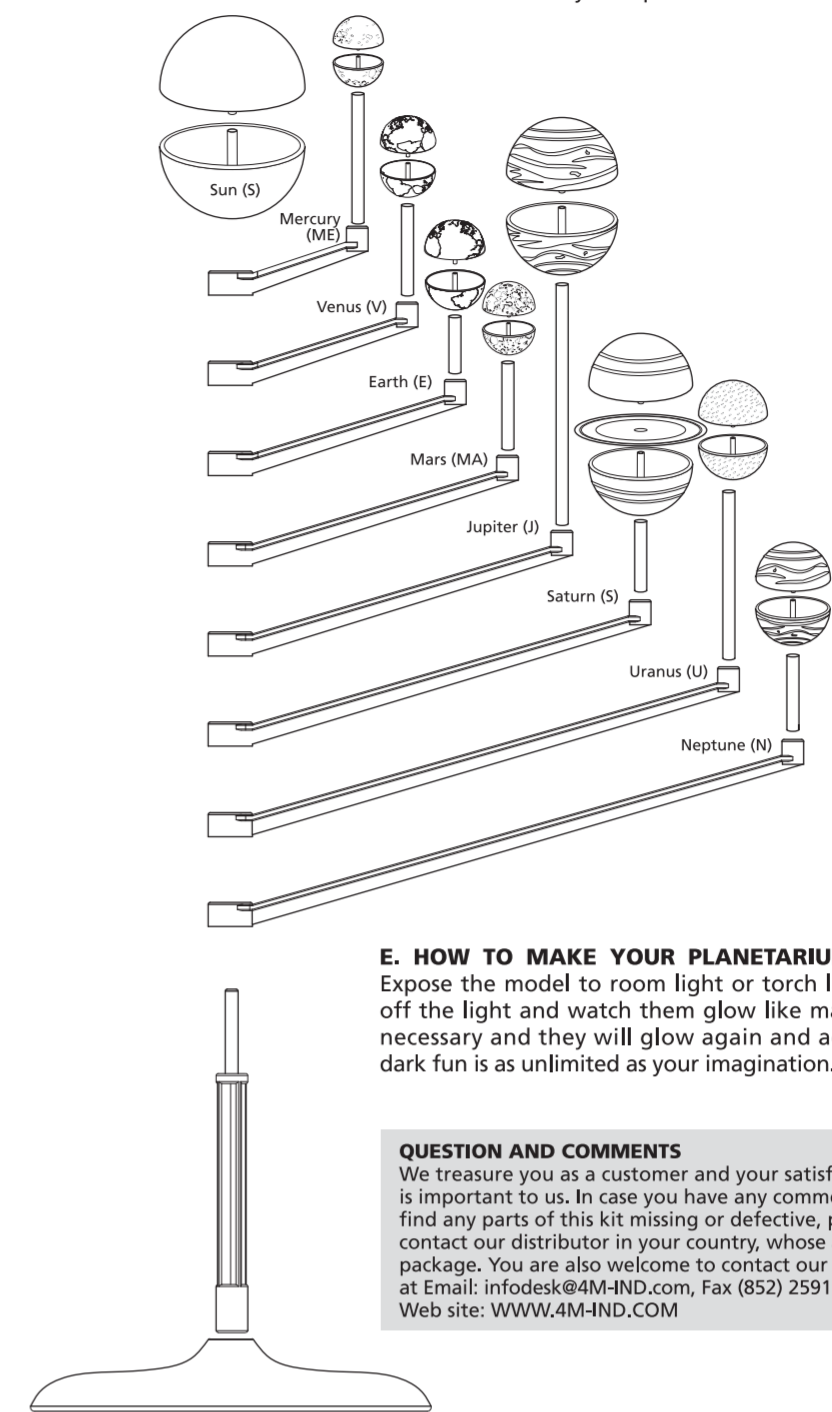
Green = Yellow + Blue
Orange = Yellow + Red
Purple = Blue + Red
Brown = Red + Yellow + little Black
Pink = Red + White
Sky Blue = Blue + White
Lime Green = Yellow + little Blue
Turquoise = Blue + White + little Yellow

Mix the colours with White and Black to make them look lighter or darker respectively. Do not mix too many colours together as that will make final colour look muddy.

Glow Highlight - after the planet has been painted by the original colours, highlights some details with the glow paint. The details will glow in the dark like magic. Experiment mixing the glow paint with other colour paints. It gives the glow paint with a colour tint.

Always wash your paint brush before mixing or applying a new colour. Prepare small cup of water for this purpose. It is also a good idea to use a mixing tray for mixing paints. Close the pot lids tightly to prevent dry up of the paint. If the paint is dry, dilute it with a few drops of water.

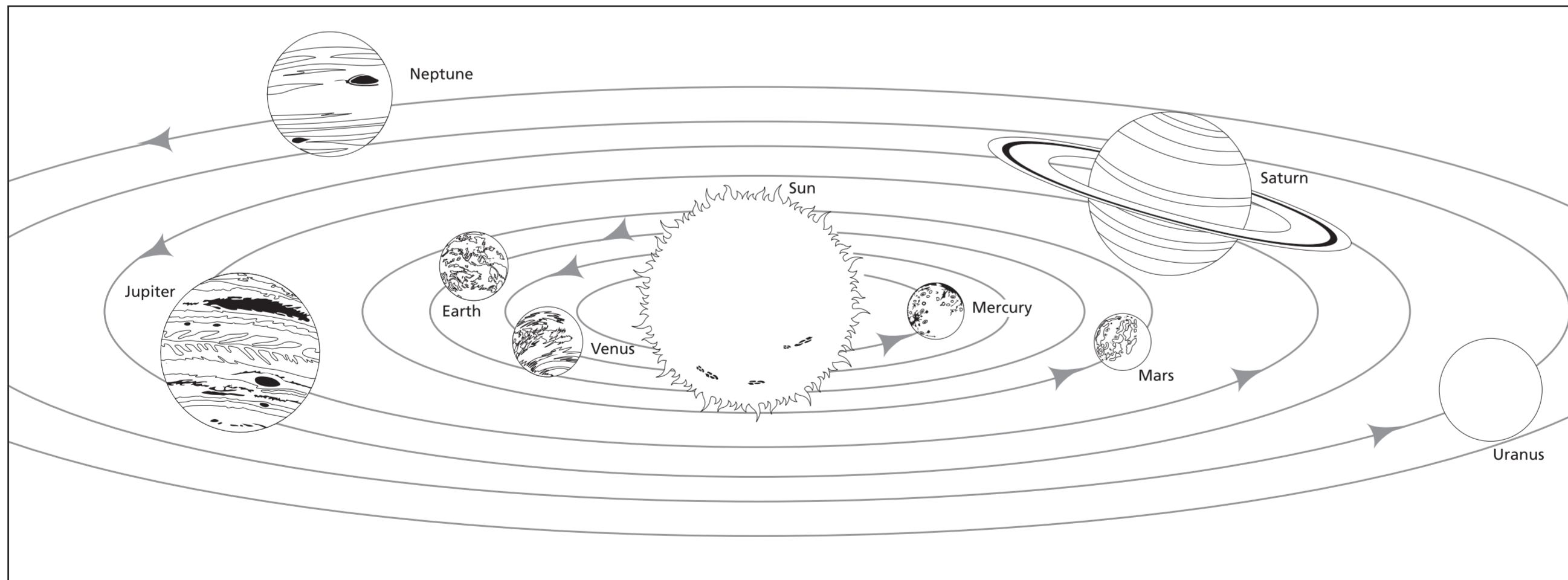
D5 Assemble the model by following the diagram. Your own glow-in-the-dark Solar System planetarium model is finished.



E. HOW TO MAKE YOUR PLANETARIUM MODEL GLOW.....
Expose the model to room light or torch light for a minute. Turn off the light and watch them glow like magic! Recharge them as necessary and they will glow again and again. This glow-in-the-dark fun is as unlimited as your imagination.

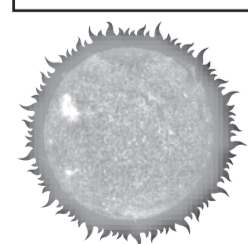
QUESTION AND COMMENTS

We treasure you as a customer and your satisfaction with this product is important to us. In case you have any comments or questions, or you find any parts of this kit missing or defective, please do not hesitate to contact our distributor in your country, whose address is printed on the package. You are also welcome to contact our marketing support team at Email: infodesk@4M-IND.com, Fax (852) 25911566, Tel (852) 28936241, Web site: WWW.4M-IND.COM

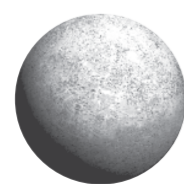


THE SOLAR SYSTEM

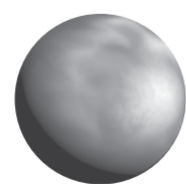
The Solar System consists of a center star, the Sun, and the eight planets that orbit it. Our Earth is one of those planets. Being held in place by the massive gravity of the Sun, all these planets orbit the Sun in circular paths of same direction. There are also other smaller objects as the asteroids, comets, moons, meteoroids and dust which circle the Sun as the eight planets do. All these objects and their orbit paths form our Solar System, which as a whole orbits the center of our galaxy.



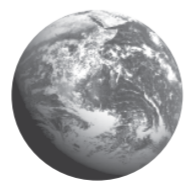
SUN
Distance from the earth : 93,000,000 miles
Diameter : 865,000 miles



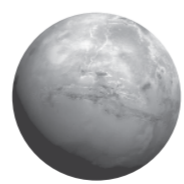
MERCURY
Distance from the Sun : 36,000,000 miles
Diameter : 3,100 miles
Revolving time around the Sun : 88 Earth days
Spinning time on its own axis : 59 Earth days
Number of Moons : 0



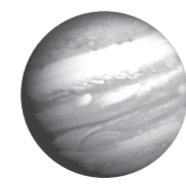
VENUS
Distance from the Sun : 67,000,000 miles
Diameter : 7,570 miles
Revolving time around the Sun : 225 Earth days
Spinning time on its own axis : 243 Earth days
Number of Moons : 0



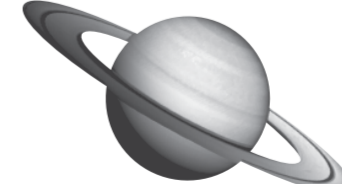
EARTH
Distance from the Sun : 93,000,000 miles
Diameter : 7,900 miles
Revolving time around the Sun : 365.25 Earth days
Spinning time on its own axis : 1 Earth day
Number of Moons : 1



MARS
Distance from the Sun : 142,000,000 miles
Diameter : 4,222 miles
Revolving time around the Sun : 687 Earth days
Spinning time on its own axis : 1 Earth day (24 hrs 37 minutes)
Number of Moons : 2



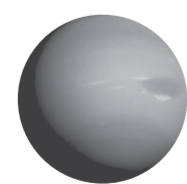
JUPITER
Distance from the Sun : 483,000,000 miles
Diameter : 88,700 miles
Revolving time around the Sun : 12 Earth years (over 4300 Earth days)
Spinning time on its own axis : less than 0.5 Earth day (9 hrs 51 minutes)
Number of Moons : more than 16



SATURN
Distance from the Sun : 889,000,000 miles
Diameter : 75,000 miles
Revolving time around the Sun : 29.5 Earth years
Spinning time on its own axis : less than 0.5 Earth day (10 hrs 14 minutes)
Number of Moons : more than 18



URANUS
Distance from the Sun : 1,800,000,000 miles
Diameter : 32,000 miles
Revolving time around the Sun : 84 Earth years
Spinning time on its own axis : 0.75 Earth day (16 hrs)
Number of Moons : more than 15



NEPTUNE
Distance from the Sun : 2,800,000,000 miles
Diameter : 30,800 miles
Revolving time around the Sun : 165 Earth years
Spinning time on its own axis : 0.75 Earth day (just over 16 hrs)
Number of Moons : more than 8