

Labu Sayong

Meal Container for Astronaut & Space Tourist

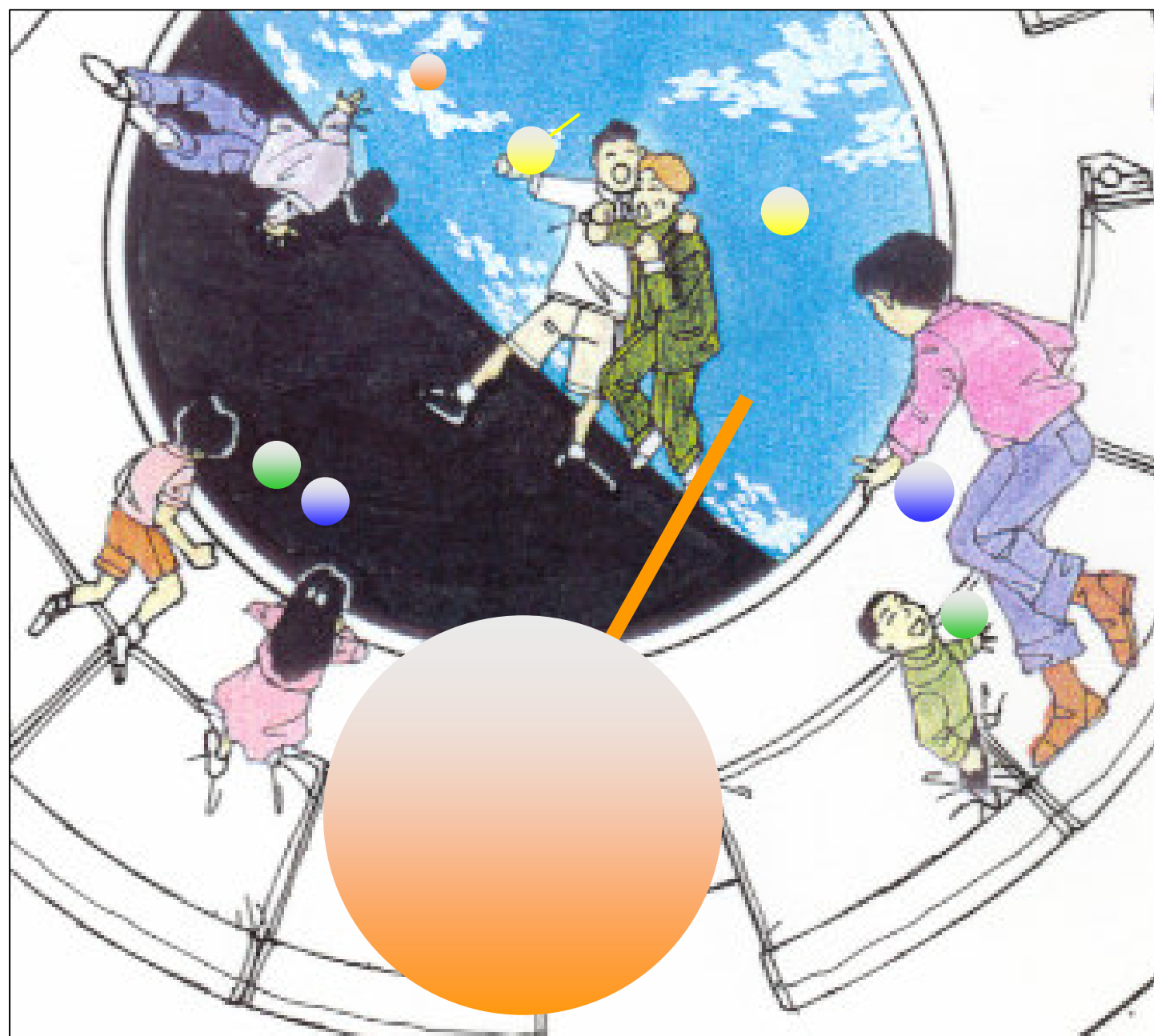
In a decade, there will be hotels operating in space. These space hotels will have rooms with services including the meal delivery service for the guests who will be astronauts and space tourists. However, due to lack of gravity, the meals cannot be delivered effectively by human workers, who will be very few onboard for economic reasons.

The meals will be delivered using a two-way vacuum system, where they will be placed inside re-useable containers, which will travel to the rooms inside vacuum tubes, which will connect the rooms to the meal preparation module. The guests will be able to order their meals using a computerized menu system, and the meals will arrive inside the containers at the meal cabinet inside their rooms accordingly. After the guests have done with their meals, they can place the containers back inside the cabinet, and the vacuum system will return the containers to the meal preparation module to be re-used.

Space Tourism Society Malaysia Chapter is developing the meal container with the cooperation from Space Future Consulting Malaysia. The container is named, *labu sayong*, a traditional water container originated from Perak as an attribute to the state for pioneering space tourism in Malaysia.

Labu sayong, the meal container for astronaut and space tourist, however will be very different from the traditional *labu sayong* in the design and materials.

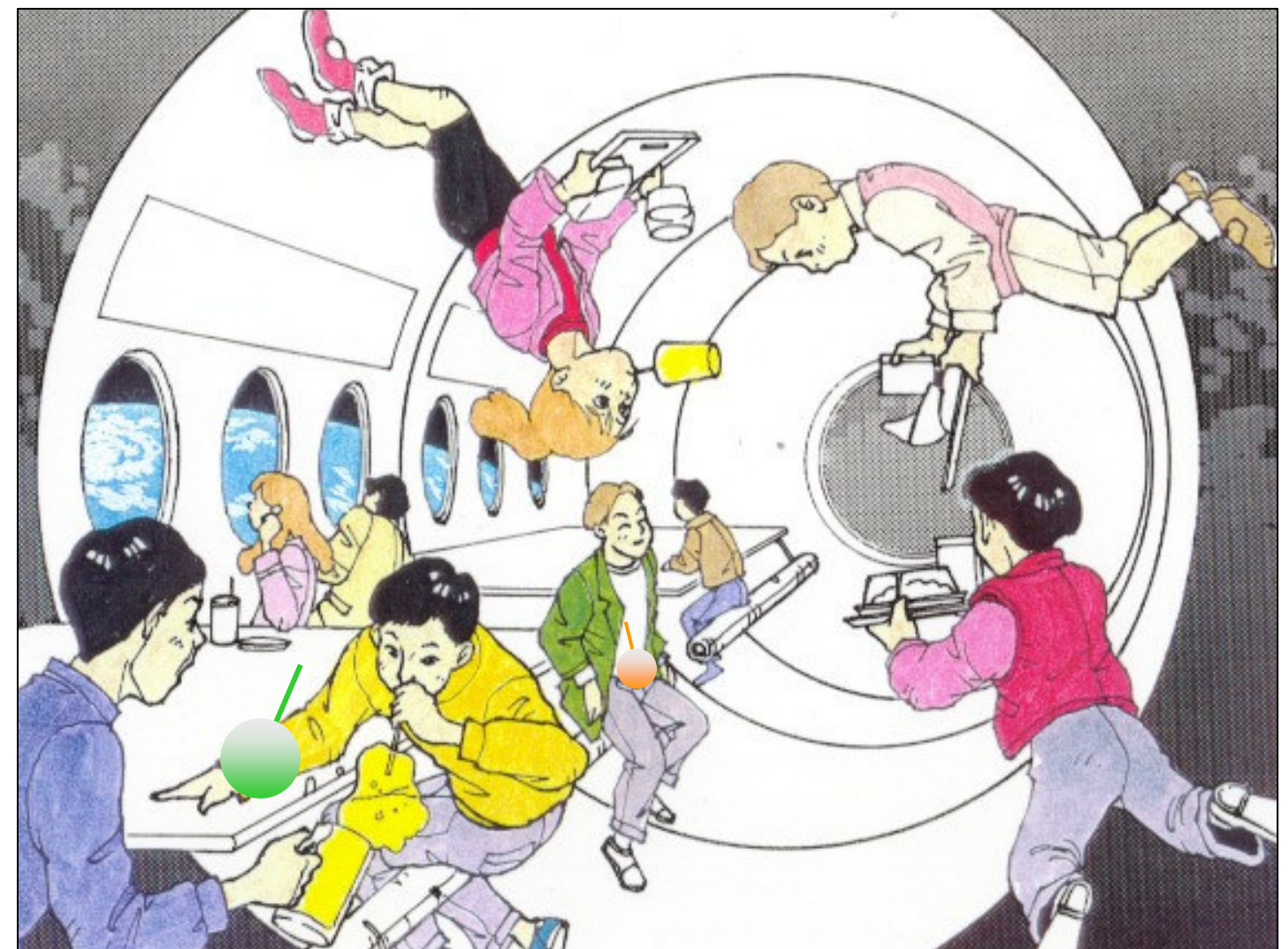
The meal container will be spherical for effectiveness and suitability. Being spherical, it will be able to travel effectively inside the vacuum tubes, which will not be straight most of their length, because they will have to be sealed inside the walls of the space hotel's modules, which will also be tubes connected to each other.



Being spherical will also be suitable with the space environment because it indicates the lack of gravity and orientation in space as stars, planets and moons are also spherical.

The exterior diameter of the spherical *labu sayong* will be 15cm as it is the maximum size to enable the container to be comfortably held on palm and effectively travel inside vacuum tubes. Its shape and size also enable the container to be comfortably placed on lap during seating position. The interior diameter of *labu sayong*, where food and water will be stored, will be 13cm as there will be 1cm layer of insulator encompass it.

Labu sayong can be separated at its *equator* into two equal *hemispheres* for access to the food. For access to the water, a tube functioning as straw, can be inserted at a point on its surface, as the most effective and safest method to drink water onboard a space hotel will be by using straw for sapping water from closed container to avoid the water from floating inside the zero-gravity environment and damages the electronic equipment.



The illustration (above) shows a guest sitting comfortably inside a restaurant onboard a space hotel with a *labu sayong* on his lap. Another guest with a *labu sayong* is trying to drink using straw from a conventional jug held by his companion, but is having difficulty in doing so. The orbital hotels will be equipped with facilities such as restaurants and recreational center, where *labu sayongs* will be effective for serving foods and drinks, especially for guests doing various activities (left).

One of *labu sayong's* color scheme will be *Earth*, which will remind the guests of Earth, the home planet while they are in space. Being *Earth*, the container will also be very attractive when floating inside the rooms and halls of the hotel and will be able to function as globe for the guest. Other *astro-color* schemes such as *Moon*, *Mars* and *Jupiter* will also be available, which will be attractive for the container to function as souvenir.

The meal container will also be made from suitable advanced materials such as foam and plastic through high-technology engineering processes.

Reference: Norul Ridzuan Zakaria, Dato' Ramly Zahari, A. Prof. Abd. Azis Abd. Majid, Jamaludin Othman, *The Symbiotic Relationship between Astronaut and Space Tourism Development – A Third World Perspective*, 2nd International Association for the Advancement of Space Safety, ESA, NASA, JAXA, ROSCOSMOS, Chicago, USA, 14-16 May, 2007.



Space Tourism Society Malaysia Chapter

