

Teaching of the waxing and waning of Moon and Venus using telescopes and web-teaching materials

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In Japanese science education curriculum, children study daily motion of the moon in 4th grade, and the Keplarian motion of Venus in the 3rd grade in junior high school. It is regrettable that study of the waxing and waning of the moon was deleted in elementary school science curriculum.

Since observation of the waxing and waning of Moon is interesting and important, we gave small telescopes (Spica) for every children in order to notice daily change of the shape of the moon and many interesting surface marking on the Moon.

In order to assist individual student observation, we made web-teaching materials on the Moon and planets showing many telescopic images of stellar objects.

Almost all children desired to see the moon and found that Moon moves from east to west instantaneously and that there are many craters on the Moon.

On the other hand, we gave the same telescopes for every junior high school students and urged to observe Venus from July, 2002 to January 2003. In this time interval, Venus passed the inner conjunction, so Venus shifted east sky in November from the evening west sky in October. This sudden change should be very impressive to the observers. Junior high school students reported movement of Venus in west sky, changes the size and shape of Venus repeatedly. Then explanation of these phenomena by simple model of planetary motion has been made in the class room.]

It is very successful to study the motion of Moon and planets involving telescopic observation, because children showed very high interests and achievements in understanding astronomical phenomena generally considered to be difficult to study.