

DAY AND NIGHT.

'The man who has acquainted himself with the statements which have been made in relation to the earth, as a member of the universe, and has been convinced of their truth, will have no difficulty in accounting for the phenomenon of day and night. We have seen that the earth, instead of being, as we might from appearances imagine, the centre of a combination of bodies, is an almost insignificant member of a small system; and so far from being the world around which the whole universe revolves, it is a little planet, having a rotation on its axis, as well as a revolution round the sun, the source of its light and heat. From these facts it follows, that at all times one half of the earth's surface must be illuminated by solar rays, and the other must be in a state of entire or partial darkness. When the sun is above the horizon of any place, it is illuminated by the light which is roused into action by its presence. But the mere presence of the sun above the horizon would not be sufficient to spread over the exposed hemisphere the cheering influence of its beams. Were there no atmosphere, or did that which envelops our planet possess no reflective and scattering powers, then an object placed at ever so small a distance from the direct beams of the sun would be shrouded in a midnight obscurity. But the dispersive influence of the atmosphere scatters the light in every direction, and the entire of one hemisphere is at once lighted by the sun. The origin of the inequality in the length of day and night will be evident when we speak of the seasons, which, although they essentially depend upon the celestial relations of the earth, will be more properly discussed when we speak of the phenomena resulting from the distribution of heat.

CHAPTER II.

CELESTIAL APPEARANCES.

ASTRONOMY has greatly aided the progress of civilization, and has proportionally benefited society, by explaining celestial appearances. Without this information the human race might still behold with terror many occasional phenomena, or doubt the continuance of those motions and conditions with