Earth, the “Third Rock from Sun”, is called the “Lonely Planet” because, to our knowledge as yet, earth is the only planet with the evidence of life. Earth is also called the “Blue Planet”, because of the oceans. They are huge water filled basins that average about 4 Km in depth and cover over 70% of the earth’s surface.

Three major oceans account for most of the oceanic surface area and volume. Of them, the Pacific is the largest: its area and volume exceed those of the Atlantic and Indian oceans combined. Also note the hemispheric asymmetry in distribution of land and oceans.

For water to occur, the necessary conditions are two: availability of hydrogen and oxygen, and temperatures between of 0° and 100°C — the conditions that are easily satisfied over much of the Solar System and the universe.

Two geological processes — hydrological cycle and plate tectonics — make the Earth unique, however. Hydrological cycle, shown on the bottom left, comprises evaporation, precipitation and run-off. The last named of this, without which the oceans would eventually dry off, also transports rock materials eroded from land and dumps them in the ocean, so flattening the land and the oceans eventually. It is plate tectonics, a theme that ascribes the continuous reshaping of relative geography of oceans and land to the opening and spread of new sea floor at the submarine ridges and the compensatory loss of existing surface at the deep sea trenches and/or folded mountain belts, that creates new ocean basins. Clearly, the hydrological cycle would eventually obliterate itself without this process of creating of new ocean basins, and thus eliminate water from Earth.

The postulate of global plate tectonics unifies the earlier postulates of continental drift, sea-floor spread, and mountain-building into a single theme.