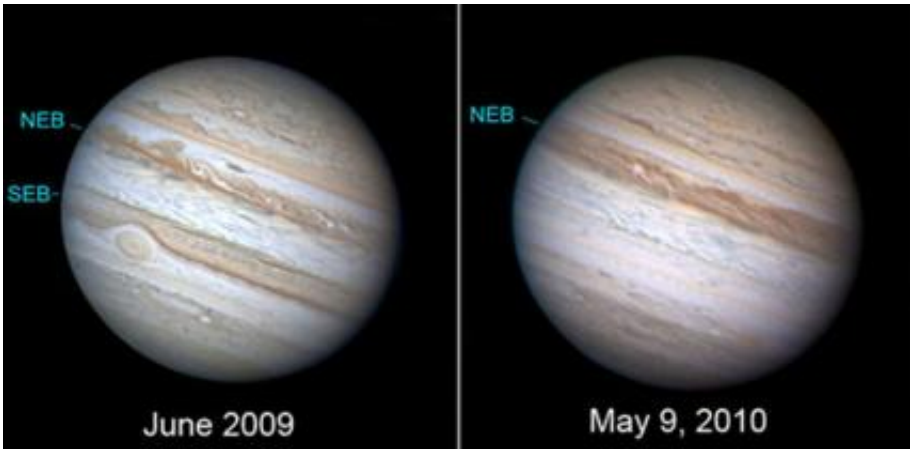
Jupiter has lost one of its cloud stripes

May 14 2010, by Lin Edwards



The South Equatorial Belt (SEB) has faded away leaving just the north belt (NEB) viewable in small telescopes. Image credit: Anthony Wesley

(PhysOrg.com) -- New photographs of the gas giant Jupiter, the first taken on May 9, show the massive reddish band of clouds known as the Southern Equatorial Belt in the planet's southern hemisphere has disappeared from view.

The first photographs were taken by a noted Australian amateur astronomer, Anthony Wesley from Murrumbateman in New South Wales, using a 14.5 inch telescope. Wesley said he had been eagerly waiting to take photographs after Jupiter disappeared behind the sun and out of view for three months. In mid 2009 it was clear to Jupiter watchers the cloud band, which encircles the planet, was beginning to enter a new fading cycle.

Wesley, an enthusiastic Jupiter observer, said the exact time the cloud belt will revive is unknown, but it fades every three to 15 years. Previous fading cycles have been characterized by violent and dramatic storms in the southern equatorial latitudes. The Northern and Southern Equatorial belts are composed of ammonia ice with phosphorus and some sulfur.

It is not known why the belt periodically disappears, but it may be that it sinks lower if it cools, and then the view of it is obscured by clouds pouring in over the top of it. The clouds on Jupiter are tens of thousands of kilometers deep. Wesley said the phenomenon could be linked to storm activity that preceded the change.

Wesley said Jupiter, the largest planet in the solar system, is fascinating to observe and photograph because the internal heat deep within the atmosphere makes it so dynamic and dramatic, and it can look different even from one day to the next.

The most dramatic feature on Jupiter is the Great Red Spot, which now stands out more than usual since it is on the edge of the Southern Equatorial Belt, which has now faded from view. The Great Red Spot is a huge storm twice the size of Earth that has raged for at least three centuries, although astronomers said last year it appears to be shrinking.

The photographs taken by Wesley have been released by The Planetary Society in California, and are also available on Wesley's own website. In July last year Wesley was first to notice a dark blemish on Jupiter, probably caused by a comet. It is possible to see the features of Jupiter even with quite a modest telescope.