A Great Christmas Mystery...

Star of Bethlehem:
Fact or Fiction

by Clark M. Thomas

As Christmas 2009 approaches, it is time to wonder again about the identity of the so-called Star of Bethlehem. There are several theories, one of which has been detailed in my web page: **http://astronomy-links.net/StarofBethlehem** There is even the idea that the star was Jesus himself, as expressed in **http://www.crystalinks.com/starbethlehem.html**

The birth of Jesus did not take place in early winter, but likely in middle April. Biblical text and new astronomical "evidence" support a spring date. Designating December 25th as Christ's birthday was a crafty choice by the early Christian church, designed to co-opt religious competitors. Several elements have since blended into our modern idea of Christmas, such as the nordic Christmas tree, and even Santa Claus himself as portrayed by Thomas Nast in the 19th century.

My earlier analysis of the Star's what, when, and where points to **NGC 1514**, a planetary nebula, that would have been at the right place at the right time, exactly when a very interesting planetary alignment was taking place. The position of this object in the sky would have been perfect for three wise guys from the southern Fertile Crescent to hop on their camels and head west.

We think of planetary nebulae as one-time events. However, there is a class of binary stars, visually seen as one star, called **cataclysmic variables.** Some eventually develop into supernovae. Perhaps someday the stars at the center of NGC 1514 will go supernova. However, many cataclysmic variables just flare up repeatedly over irregular periods, which is what likely happened to the pre-existing NGC 1514, with a flare arriving during the time of Jesus.

To learn more about the various types of cataclysmic variables, just go to this web page: **http://members.wri.com/jeffb/poster/poster.html**

Here are the results of a spectrum analysis done earlier this decade: "New spatiokinematic observations were undertaken of the planetary nebula NGC 1514 in the [O III] line at 5007 Å using an imaging Fabry-Pérot spectrometer. Our results show an inner ellipsoidal shell and polar blobs that do not conform to bipolar morphology. It is argued that the nebula is a descendant of a common envelope binary system the periodicity of which is estimated to be about 10 days, with a progenitor mass of 4.5 M." **C. Muthu *et al*, 2003, *The Astronomical Journal*, 126 2963-2970. doi: 10.1086/379552** ★