

Pleiades bound and Orion unbound

In a recent *TJ* article,¹ Dr John Hartnett discusses the reference to the Pleiades and Orion stars in Job 38:31. He concludes that this verse should not be used to indicate prescience, or anticipated science, in Scripture. That is, the verse does not contain a 'hidden message' of accurate science which anticipates later discovery. I certainly agree that one must be careful in reading modern science into the Bible. Science ideas continually change while the Bible does not. As an inspired document the Bible does not need to be 'propped up' by the latest scientific discovery. Still, a response is needed to the Pleiades–Orion article because it may mislead readers.

In Job 38:31, God asks whether man can 'bind the sweet influences of Pleiades?' The traditional view, based on our modern understanding of gravity, is that the Pleiades stars are indeed gravitationally bound together. In this view the verse describes in poetic form the gravity force, unknown in Old Testament times, by which God holds the Pleiades together.

Hartnett states, 'Modern astronomy has shown that the constituent stars of Pleiades are expected to dissociate within the next 250 million years.' Therefore, he concludes the verse cannot imply that Pleiades is bound together by gravity. However, what is left unsaid in the article is that the possible dissociation of Pleiades is true *only* over unlimited evolutionary, or 'deep', time. The secular assumption is that the Pleiades stars will eventually disperse due to energy input from the stellar environment and also from external gravitational interaction from other stars which may pass through the cluster. This assumes an immense timescale. However, the Pleiades cluster presently looks today much as it did at its beginning on the fourth day of creation, and it remains gravitationally bound. In fact this boundedness is

the very definition of both open and globular star clusters, of which there are hundreds of examples. Pleiades consists of as many as 3,000 stars within a volume of space of about 13 light-years diameter. This results in the Pleiades stars averaging less than one light-year apart from each other, definitely experiencing mutual gravity. The compact Pleiades stars also appear to be moving through space together as a unit, with their proper motion in the same general direction. If the Pleiades stars are defined as unbound in evolutionary time, then many other star clusters, and also entire galaxies which could collide over long timescales, may become unbound.

Hartnett also addresses the Job 38:31 reference to Orion, 'Canst thou loose the bands of Orion?' The traditional view here is that the Orion stars are indeed gravitationally unbound, another possible biblical example of scientific anticipation, unknown in Job's day. The article argues that the traditional view once again is invalid since Orion stars actually are bound by gravity. However, the discussion is limited to specific stars embedded deep within the Orion Nebula, which in turn is located within the Orion Constellation. The particular stars described may indeed be gravity-bound; however, they represent a very minor part of Orion and are invisible to the unaided eye.

Much more likely, the Job verse refers to the Belt of Orion which consists of three very prominent stars. These well-known stars are equally spaced in a distinct straight line and also are positioned directly above the earth's equator. All three are bright, averaging 2.0 in apparent magnitude. The east and centre stars are Alnitak and Alnilam, each about 1,500 light-years distant from Earth. They are actually independent, separated by more than 50 light-years. The west star is Mintaka, about 800 light-years away. It should also be noted that the belt stars are moving in random directions, not together as is the case

for Pleiades stars. The Orion Belt stars, the logical identification of the 'bands' of Job 38:31, are clearly separated by great distances and are unbound by gravity.

I conclude that concerning the two star groups mentioned in Job 38:31, the Pleiades stars remain bound and the Orion Belt stars are unbound, just as described. Whether or not Job 38:31 should be used to show modern science findings in the Bible is a separate question, but this idea cannot be ruled out on the basis of modern astronomical understandings. I wish to thank Dr Hartnett for his stimulating discussion of the Pleiades and Orion.

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References

1. Hartnett, J., Pleiades and Orion: bound, unbound, or ... ? *TJ* 18(2):44–48, 2004.

A 'mite' wrong

Dear Editor:

I appreciated the well written and well documented article 'Insect evolution: a major problem for Darwinism' in *TJ* 18(2). However, I did notice one mistake. On page 93, it states 'Many insects are extremely well preserved, even tiny ones such as mites...' Actually, mites are not insects, but rather are in the class Arachnida.

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