

## Arguments for our special sun

I'm writing to comment on some aspects of Jonathan Henry's (JH's) interesting article 'The sun is not an average star' in *TJ* 17(3).

First of all, a minor specific comment: JH states that 'the median of a population corresponds to the mean only if the population follows a normal distribution', but this is unnecessarily restrictive. Surely, the median equals the mean for *any* symmetrical distribution?

Secondly, a minor general comment: JH (rightly) states that Main-Sequence (MS) G2 stars (of which the sun is one) make up a minority of all stars, but he then talks as if this means that the sun is a rare star. The trouble with this is that even stars that make up a small minority are present in huge numbers, simply because of the vast number of stars in our galaxy alone. So the fact that the sun is an MS G2 star is irrelevant when it comes to establishing its distinctiveness.

Finally, a more specific (and serious) criticism: table 1 (at the bottom of p. 40) lists the 'Distinctive Characteristics of the Sun'. The first six rows cover the sun's dimensions, mass, luminosity, absolute magnitude, spectral class and surface temperature. But this is misleading, since, for MS stars, the mass determines all of the other five properties. (I know that chemical composition plays a role, too, but it is a minor one compared to that of the mass.) These six rows should thus have been collapsed into one, in order to make an intellectually honest case for the sun's distinctiveness.

(The luminosity and absolute magnitude are even more closely related than the other four, since one is a direct translation of the other. The absolute magnitude is the observational measure from which one deduces the luminosity. To give them as separate entries is thus almost like quoting a distance twice; once in kilometres and again in miles.)

There is a footnote to the table which states that 'Characteristics 1–6 are related, showing that the sun in a holistic sense is not an average star.' But this, too, is misleading. Characteristics 1–6 are not just 'related'; they are directly determined by the mass—a single parameter. The rest of the footnote is either misleading or meaningless. What does 'in a holistic sense' mean in this context? The fact that the first six rows are 'related' does not show (in *any* sense) that the sun 'is not an average star'; instead it shows the opposite. There should not be six rows of 'distinctive'-ness, but only one—and this means that the table would collapse from ten rows to only five. The number of 'certains' in the last column would then collapse from seven to only two. Given my previous comment about the large number of G2 stars, one of this pair of 'certains' should also be removed, leaving only one.

I'm sure that JH presented this table in good faith, but it unfortunately gives the impression of someone trying to back up a weak case and deliberately 'fudging' the presentation to do so. In other words, it gives the impression of intellectual dishonesty. The remaining four rows of the table actually present quite a *strong* case, but JH weakens it by including five of the six previous rows.

This sort of sloppy thinking (or writing) can only confirm the prejudices of our evolutionary critics. It is (of course) right to present all the evidence that we can in order to refute evolution on the evolutionists' own terms; but we should always do it in an intellectually rigorous way!

(A final message to JH: I hope that I don't sound too critical. I know very well how easy it is for faults like this to 'slip through the net', but thought that I ought to comment for the sake of our (and God's) cause. As I said, I found your article interesting and hope to read more by you in the future!)

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## Jonathan Henry replies:

I appreciate David Brand's careful reading of 'The sun is not an average star' (*TJ* 17(3):35–42, 2003) and his kindly response.

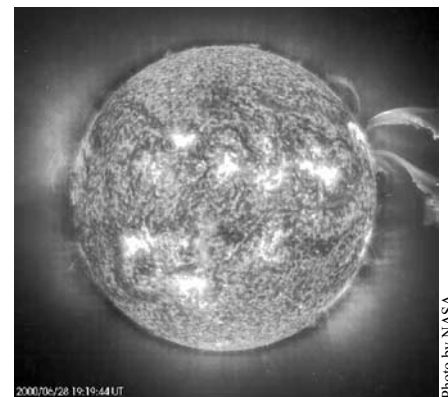
Referring to my statement on p. 37, Dr Brand is correct that the median and mean of a population are equal for any symmetrical distribution, not just a 'normal' one.

Dr Brand next claims that the paper implies the sun's G2 status 'means that the sun is a rare star'. Perhaps Dr Brand has confused biblical intimations of the sun's 'specialness', discussed on pp. 35, 38 and 41, with claims that the sun is special astrophysically. The paper does not claim astrophysical 'specialness' for the sun. It does claim that the sun is not average, but 'non-average' doesn't mean rare.

Indeed, the section 'The sun is not average, but is it special?' on p. 38 explicitly states that we cannot say the sun is special astrophysically: 'Can we conclude that the sun is therefore "special", i.e. extraordinary? ... Astrophysically ... we are prevented from reaching this conclusion ... [W]e are not in a position to make a comparison between the sun and other stars which would allow us to characterize the sun as astrophysically special or unique.'

Further, I agree with Dr Brand that the first six rows of solar properties in table 1 are related. The paper does not claim otherwise. That is why footnote (a) of table 1 reads in part 'Characteristics 1–6 are related ...'. Nevertheless, Dr Brand objects to table 1 in three ways:

1. He believes that the first six rows



should be collapsed into one, listing only solar mass as atypical. Such a restriction would invalidate several quotations from respected sources cited in the paper. On p. 37, Crosswell is quoted as claiming that the sun is atypical in spectral type, mass and absolute magnitude. Following Brand's reasoning, Crosswell should constrain his claim to solar mass only. Similarly, astronomer S.P. Maran is quoted on p. 38 as citing solar diameter, temperature, luminosity and mass as atypical, but according to Brand's rationale, Maran should have cited only mass.

2. He disagrees that characteristics 1–6 in table 1 are merely related, but that mass 'directly determines' the other properties. Mass is the independent variable in equations relating other stellar properties to mass. In such a mathematical context, it is proper to say that mass determines other properties.

In the physical sense, however, evolutionary theory views stellar mass as determining other stellar properties over the lifetime of a star. This is not the biblical view.

Biblically, God created stars on Day 4 (Gen. 1:14–18). Then He 'finished' the creation (Gen. 2:1). There is no evidence biblically or by direct observation (theoretically-based inferences are not observations!) that star formation happens today. Rather, God created stars as objects with inter-related characteristics. Stars did not, and do not, evolve out of nebulae with mass as a 'driver' for determination of other properties.

3. Dr Brand objects to using 'holistic' in footnote (a) of table 1. 'Holistic' connotes relationship, inter-relatedness and integration. I chose this word to emphasize that characteristics 1–6 are not independent properties—which is also Dr Brand's assertion.

Finally, Dr Brand claims, 'The fact that the first six rows [of table 1] are "related" does not show (in *any* sense) that the sun "is not an average

star"; instead it shows the opposite.' I agree. The presence of relationships among these properties is not unique to the sun, but the paper does not claim otherwise.

Should table 1's first six rows be collapsed into one? To get perspective on this, consider footnote (b) of table 1, which states that the characteristics in rows 8–10 may also be related. Dr Brand sees no problem in breaking out these last three characteristics separately instead of collapsing them into one. He concludes that these last rows 'actually present quite a *strong* case' (Dr Brand's emphasis) for a non-average sun. Why does Dr Brand believe that breaking out rows 1–6 makes a 'weak case', but breaking out rows 8–10 does not?

Rows 1–6 in table 1 summarize old knowledge. May I suggest that the principle of mediocrity, long embodied in the academic discipline of theoretical astrophysics, conditions one to believe that the sun cannot be atypical astrophysically? May I further suggest that it is helpful to recognize this bias in order to view any list of atypical astrophysical characteristics for the sun as more than a 'weak case' against the principle of mediocrity? To aid in exposing this bias, the paper discusses the principle of mediocrity on pp. 36–38.

In contrast to rows 1–6 of table 1, rows 8–10 reflect fairly new discoveries. Within the theoretical astrophysics community, the principle of mediocrity has not yet been applied against these findings. An individual with training in theoretical astrophysics therefore retains the intellectual freedom to view the conclusions of rows 8–10 objectively. Thus viewed, these findings imply that the sun is atypical, which is also Dr Brand's conclusion.

Again, I wish to express sincere thanks to Dr Brand for expressing his concerns and also to thank him for the kind and encouraging remarks he included in his letter.

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