

New Orbits, Old Urth

The Urth list — 1 messages, 1 voices, 04 Aug 1998

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m.driussi — 04 Aug 1998, 19:16

GriffJon,

Hello and welcome aboard.

An immediate problem with giving Urth a new solar orbit is that it will seriously mess up the calendar--that is, the solar year can't be 365 days long, and so on. Plus the arrival of a New Sun will probably cause more trouble unless it is really just a "new hemisun" or some other fraction to account for the new orbital position: the new sun would not be a restoration of the ancient order but rather a new compromise. (Venus fries, Mars freezes, film at eleven!)

Another unexamined consequence of having Sol's "ecosphere" (life zone, whatever you want to call it--the range between the boiling point and freezing point of water) shrink so that Urth is trembling on the edge of icy extinction is that Mars/Verthandi, by reason of being 1.5 times as far from the sun (well, =Mars= is that far, at least), must already be much colder, i.e., well into the "extinct" area.

Well fire up the Barsoomian Atmosphere plant, switch it to the "Carl Sagan runaway greenhouse" setting, cross your fingers, and figure that the Verthandians get more terraforming perks because they pay more in taxes.

One of the many difficulties in assessing the Old Sun/Urth situation is that the Old Sun is =not= "natural"; that is, it isn't something that astronomers have really seen. (And while stellar engineering involving the introduction of black holes into stars has been published in technical journals, they are not widely read, nor well understood, and by their nature are highly speculative to begin with.) So we can't really model the Old Sun as a "red dwarf" star, because even though it is "red" it isn't really an M-type star; we might get more mileage out of modeling it as a K-type "orange" star, but even then the ecosphere shrinks down to around .5 AU, one half of the solar orbit that Earth has. Leaving us with something between G-type (our Sun) and K-type (the next cooler stage on the natural scale).

(Also note that, to the best of my limited knowledge, there is no serious theory of Earth's ice ages which explains them as the effects of orbital shifts. Ice ages are mysterious, there are various notions as to why they start, how long they last, and why they end. Why do I bring this up? Because we struggle to attribute all Urth malaise to an altered Sun, when in fact a lot of it might be just like a severe ice age with "mood lighting." Just a thought.)

But all this is made more murky by the fact that there is much disagreement over how wide the ecosphere bands are anyway. That's Science for you! As opposed to science fiction, where it is all about "story" and there are never any arguments of any kind. <g>

=mantis=