Re: Slabinski and Mingst/Stowe disagree in Pushing Gravity

Source: http://sci.tech−archive.net/Archive/sci.physics.relativity/2005−05/msg00146.html

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- *From*: Paul Stowe <ps@xxxxxxxxxxxxxxxxxxxxxxxxxxx>
- *Date*: Tue, 03 May 2005 23:40:49 GMT

On 3 May 2005 05:17:53 −0700, "TC" <tclarke@xxxxxxxxxxx> wrote:

>Paul Stowe wrote:
>> ... The equation derived empirically for heating is,
>
> empirically? No theory?

Come'on Tom, every significant step is spelled out in our article
(Eq. 22−26, pages 190−191). Within the assumptions specified
there is, as far as I'm aware, NO mathematical inconsistency there.

>> −(UA/MC)t
>> q' = kM/r(1 − e)
>>
>> Where U is the overall heat transfer coefficient
>> A is the radiating surface area
>> M is the mass
>> r is a spherical body's radius
>> C is the heat capacity
>> t is time since creation
>> k is an emperically determined LeSagian constant ~2.4E−19
>> q' is Power per unit area
>
>> As t −> oo this becomes simply,
>
>> q' = kM/r
>
> Once again the problem is that this is incompatible with
> Slabinski or any other LeSage/Fato theory in which provides
> heat on a per unit mass basis.

Yes, on a 'per mass basis'.

> Mass is M − no dependence on r.
> Area is 4pi r^2
> so to be compatible with Slabinski et al your expression
> should read
>

> q' = KM/r^2
>
> [pi etc goes into little k to big K switch]

OK Tom, do a simple fit test. Let Jupiter be the base and
we'll say that the net heat is proprtional to either the
mass divided by radius (s) OR mass (m). Now, we know that
the net heat flux for Jupiter is ~ 6.6 Watts/m^2. Thus,
either,

x = 6.6(m/m')

or

x = 6.6(s/s')

Where s' & m' are the mass & mass per radius of our basis,
Jupiter.

Go through the Planetary data & see which empirically fits
best...

The Moon net is 0.02 Watts/m^2 & is two times higher than
expected. Neptune is ~1 Watt/m^2, Saturn 2.3 Watts/m^2,
Earth is 0.06 Watts, ... etc.

Now the Earth is an interesting study. We know that,

__
q' = U \/T
__
And, assuming that \/T is ~ 10,000° C and q is 0.06, then one
can solve for U... Then, C (heat capacity) is roughly density
dependent such that,

C ~ 0.13(rho)

Where rho is density in kg/m^3. Thus, with Earth's overall density
@ 5525 kg/m^3 C−> ~718. Thus the 'Lumped Heat' thermal response
coefficient is,

UA
−−
mC

Given A = 4pir^2 and m = (rho)4pir^3/3 we get,

3U
−−−−−−
C(rho)r

(There's that thar area to volume 1/r effect showing up in the exponential response term)

and, U is ~6E−06. Thus,

−1
1/t = [3(6E−06)]/[718(5525)6.374E+06] = 7.12E−19 sec

this is 44.5 Billion years... The Earth cannot have reached any thermal equilibrium status EVEN IF! the was just a one time induction of thermal input a t = 0 (time of creation). So the 0.06 MUST be significantly lower than what will be expected at equilibrium.

Paul Stowe
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- ***Follow−Ups***:
  - ***Re: Slabinski and Mingst/Stowe disagree in Pushing Gravity***
    - *From:* TC

- ***References***:
  - ***Re: Slabinski and Mingst/Stowe disagree in Pushing Gravity***
    - *From:* Strael Nosduj
  - ***Re: Slabinski and Mingst/Stowe disagree in Pushing Gravity***
    - *From:* Paul Stowe
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