

Subject: Gyro self-heating

From: Scott Little <little@earthtech.org>

Date: Tue, 08 Jan 2008 23:58:30 -0600

To: puthoff@aol.com, ibison@earthtech.org

Looks like the gyros will not keep themselves very warm....

Gyro self heating

$$\begin{aligned} \text{len} &:= 3.5 \cdot \text{in} & w &:= 2.3 \cdot \text{in} & h &:= 1.3 \cdot \text{in} \\ \text{area} &:= (\text{len} \cdot w \cdot 2) + (2 \cdot \text{len} + 2 \cdot w) \cdot h & \text{area} &= 0.02 \text{ m}^2 \\ T_h &:= 210 \cdot \text{K} & T_c &:= 4 \cdot \text{K} \\ \varepsilon &:= .9 \\ P &:= \sigma \cdot \varepsilon \cdot \text{area} \cdot (T_h^4 - T_c^4) & P &= 1.997 \text{ W} \end{aligned}$$

(yes, I took the lazy way out and iterated the T_h value until I got to 2 watts of radiated power....)

210K is -63C....

Let's see what Martin says about temperature control of the sensors. I think we may have something here....

Scott Little
1406 Old Wagon Road
Austin TX 78746
512-328-4071