

Google Summer of Code 2016  
Light Curve Modelling with Icarus  
McGill Space Institute  
*Supervisor: Dr. Kelly Lepo*

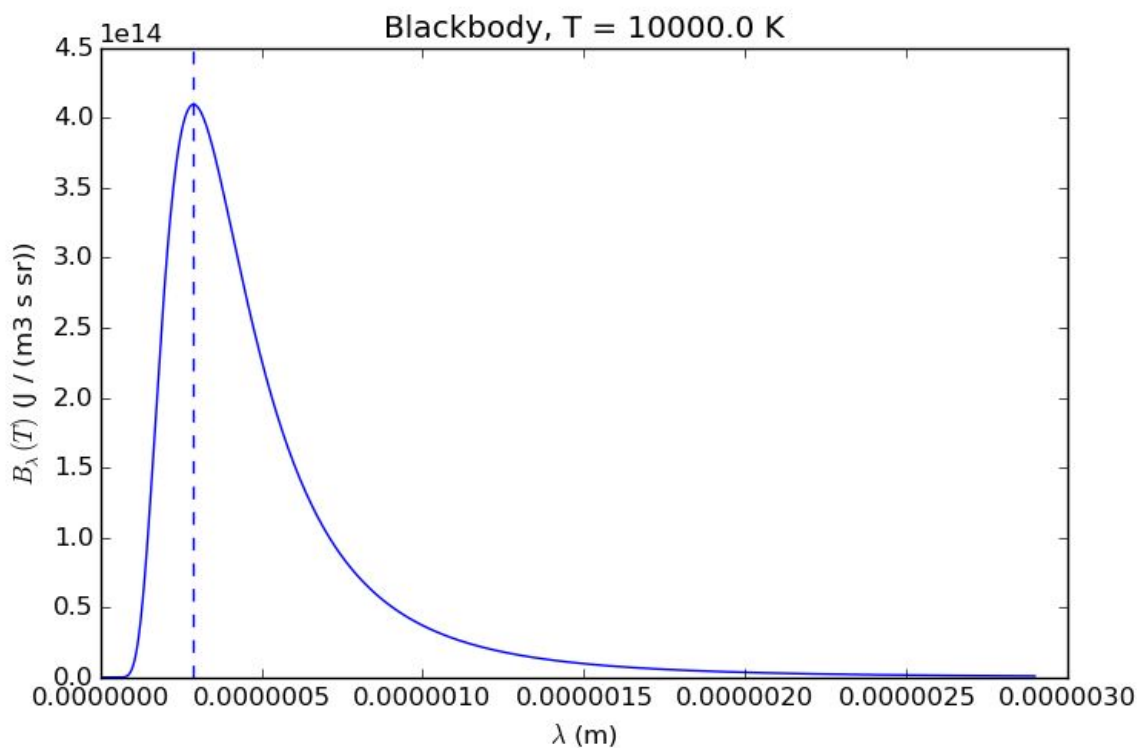
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Link for the code of following exercise: [https://github.com/jakharkaran/light\\_curves](https://github.com/jakharkaran/light_curves)

Plot of flux v/s wavelength of blackbody at temperature of 10,000 K.



Wavelength at the maximum value of flux is  $2.8977721 \times 10^{-7} \text{ m}$  or 2897.7721 Angstrom  
Total radiated flux = 567037300.0 W / m<sup>2</sup>

The magnitude for Ultraviolet filter (U) is 3.68481995467

The magnitude for Blue filter (B) is 4.35505049587

The magnitude for Visual filter (V) is 4.18357782342

The magnitude for Red filter (R) is 4.00735124411

In the given curve following values Obtained were:

The magnitude for Ultraviolet filter (U) is 2.56

The magnitude for Blue filter (B) is 2.59

The magnitude for Visual filter (V) is 2.61

The magnitude for Red filter (R) is 2.62

The possible reasons for difference in value of magnitude with the given curve :

- The reference value of centre wavelength, band width of filters and the value of reference flux (star Vega) is quoted different in different journals which hence is different from the values taken in the given curve.
- The reference values doesn't follow the trend as in the given curve due to same reasons
- The filters are assumed to have 100% transmittance along the bandwidth in my code while the given code and the other available filters have varied transmittance across spectrum.

Given Curve: <http://astro.unl.edu/classaction/animations/light/bbexplorer.html>

Reference values: <http://www.stsci.edu/instruments/observatory/PDF/scs8.rev.pdf>