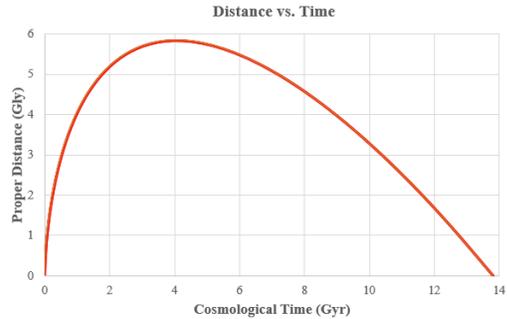
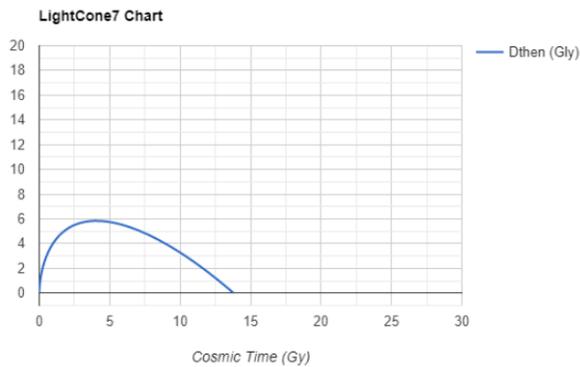


Output of Jorrie's calculator is in tabular form and has **Chart** function; we will use it here. To get the **proper distance** vs. **time** plot for the observed photon, we can use the following steps:

- Start the calculator: http://jorrie.epizy.com/Lightcone7-2021-03-12/LightCone_Ho7.html?i=1, it uses **PLANCK Data (2015)** as default input.
- Leave the **Upper row redshift, z_{upper}** at 1090, z value of the observed CMB photon, and change the **Lower row redshift, $z(lower)$** to 0.
- Click **Open Column Definition and Selection**, keep only **Cosmic Time** and **Dthen** selected, and click **Open Column Definition and Selection** again to close it.
- Select **Chart** and click **Calculate**. The **Dthen** vs. **Cosmic Time** plot will appear.



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See Attachment

Please help if you can. I tried to insert an image, but received the message,

Oops! We ran into some problems.

Security error occurred. Please press back, refresh the page, and try again.

That's why I am using attachment here.

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I argue that this plot gives us the **proper distance** vs. **time** relation for the observed CMB photon. Here is my interpretation:

The photon, started 41.6 Mly from our location around $t=0.38$ Myr, was carried away by the rapid expansion of space. It moved as far away as 5.84 Gly. As the space expansion slowed down, it turned around near $t=3.9$ Gyr and traveled to us, spending total 13.8 Gyr for the journey. The result shows one of the complicate consequences of the expansion of space.

Please help to justify my argument and interpretation.

JimJCW