



The Sound of Space

EP. 5 - HOW DO WE CAPTURE IMAGES FROM SPACE?

Brought to you by the University of Toronto Aerospace Team (UTAT)

00:34 Background and Motivation

- [1] T. Reichhardt, "The first photo from space," *Smithsonian Magazine*, 24-Oct-2006. [Online]. Available: <https://www.smithsonianmag.com/air-space-magazine/the-first-photo-from-space-13721411>.
- [2] N. A. S. A. C. Administrator, "Sputnik 1," *NASA*, 05-Nov-2015. [Online]. Available: https://www.nasa.gov/multimedia/imagegallery/image_feature_924.html.
- [3] L. NASA, "Benefits," *NASA*, 21-Dec-2021. [Online]. Available: <https://landsat.gsfc.nasa.gov/benefits/>.
- [4] M. Shepherd, "5 reasons NASA should study Earth and they all start with 'B'," *Forbes*, 13-Dec-2016. [Online]. Available: <https://www.forbes.com/sites/marshallshepherd/2016/12/03/5-reasons-nasa-should-study-earth-and-they-all-start-with-b/?sh=c0af1427446c>.
- [5] U. Arizona, "Space versus ground telescopes," *UArizona Research*, 09-Feb-2021. [Online]. Available: <https://research.arizona.edu/stories/space-versus-ground-telescopes>.
- [6] E. In Chief, "8 advantages and disadvantages of Hubble Space Telescope," *ConnectUS*, 14-Jan-2017. [Online]. Available: <https://connectusfund.org/8-advantages-and-disadvantages-of-hubble-space-telescope>.

10:21 How Space Imaging Works

- [7] M. Williams, "What is the direct imaging method?," *Universe Today*, 08-Mar-2021. [Online]. Available: <https://www.universetoday.com/140341/what-is-direct-imaging/>.
- [8] "Understanding Spectrometry and Spectroscopy," *ATA Scientific*, 17-Jan-2020. [Online]. Available: <https://www.atascientific.com.au/spectrometry/>.

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- [9] N. A. S. A. NASA, "Landsat," *NASA*, 17-Dec-2021. [Online]. Available: <https://landsat.gsfc.nasa.gov/about/>.
- [10] C. S. Agency, "Radarsat Constellation Mission," *Canadian Space Agency*, 12-Jun-2020. [Online]. Available: <https://www.asc-csa.gc.ca/eng/satellites/radarsat/Default.asp>.
- [11] G. GHGSAT, "In Focus: 2021," *Ghgsat.com*, 2021. [Online]. Available: <https://www.ghgsat.com/en/case-studies/in-focus-2021/>.

- [12] D. P. says; T. R. says; G. I. S. G. says; and L. C. says; "Planet labs imagery: The entire Earth, everyday," GIS Geography, 22-Jan-2022. [Online]. Available: <https://gisgeography.com/planet-labs-imagery/>.

22:45 Space Observation

- [13] K. Hille, "About - the Hubble story," *NASA*, 30-Dec-2021. [Online]. Available: <https://www.nasa.gov/content/about-the-hubble-story/>.
- [14] "Spitzer Telescope - Fast Facts," *Spitzer Space Telescope*. [Online]. Available: <https://www.spitzer.caltech.edu/mission/fast-facts>.
- [15] C. Dreier, "How much does the James Webb Space Telescope Cost?," *The Planetary Society*, 25-Oct-2021. [Online]. Available: <https://www.planetary.org/articles/cost-of-the-jwst>.