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Concepts

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- Electron density in the trail far higher than surrounding ionosphere
 - Range from 10¹⁰ to 10¹⁶ electrons m⁻¹ (Note linear density)
 - Radio waves more easily interact with higher density trails
 - Different scattering mechanism at HF than VHF







Considerations

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Considerations for Observations at HF

































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15 MHz

Six spliced images from 1 February 2020 at 1543 to 1655, 73 min total duration showing a stream of shortduration meteor trail reflections at 15 MHz. This spliced Argo image has been stretched vertically to emphasize the short-duration traces left by the reflections. Note that the reflections have a slight bias toward positive frequency shifts. The peak shift is about +6 Hz. A few striated long-duration reflections are visible, all with positive frequency shift. Two spurious signals drifted through the spectrum and are seen as steep slanted lines just left of middle covering the full 20 Hz frequency span of the waterfall.







	Weblinks & References
	Reeve Observatory Homepage: <u>http://www.reeve.com/</u>
	Near Real-Time Data: <u>http://www.reeve.com/Meteor/Meteor_simple.html</u>
	Meteor Trail Reflections: https://www.reeve.com/Documents/Articles%20Papers/Reeve_MeteorRadioObsrv.pdf https://www.reeve.com/Documents/Articles%20Papers/Reeve_SmpIHFMeteorTrailReflObsrvdAnc.p df
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	McKinley, D., Meteor Science and Engineering, McGraw-Hill Book Co., 1961
	Schanker, J., Meteor Burst Communications, Artech House, 1990
	Sugar, G., Radio Propagation by Reflection from Meteor Trails , Proceedings of the IEEE, February 1964
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Presenter



Whitham Reeve obtained Bachelor of Science in Electrical Engineering and Master of Electrical Engineering degrees at University of Alaska Fairbanks, USA. He worked as a professional engineer and engineering firm owner/operator in the airline and telecommunications industries for more than 40 years and now manufactures electronic equipment used in radio astronomy. He also is a part-time space weather advisor for the High-frequency Active Auroral Research Program (HAARP) and a member of the HAARP Advisory Committee. He has lived in Anchorage, Alaska his entire life. Email contact: whiteeve@gmail.com

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