Interference from Starlink and other Satellite Constellations

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Initial Starlink launch: May 24, 2019
60 satellites, V ~ 3.0
Victoria Girgis, Lowell Observatory

AAS Committee on
Light Pollution, Radio Interference, and Space Debris

Ad hoc AAS Starlink committee

J. Hall (Lowell), J. Lowenthal (Smith), P. Seitzer (U. Mich)

C. Walker (NOIRLab), J. Parriott (AAS), K. Krafton (AAS)

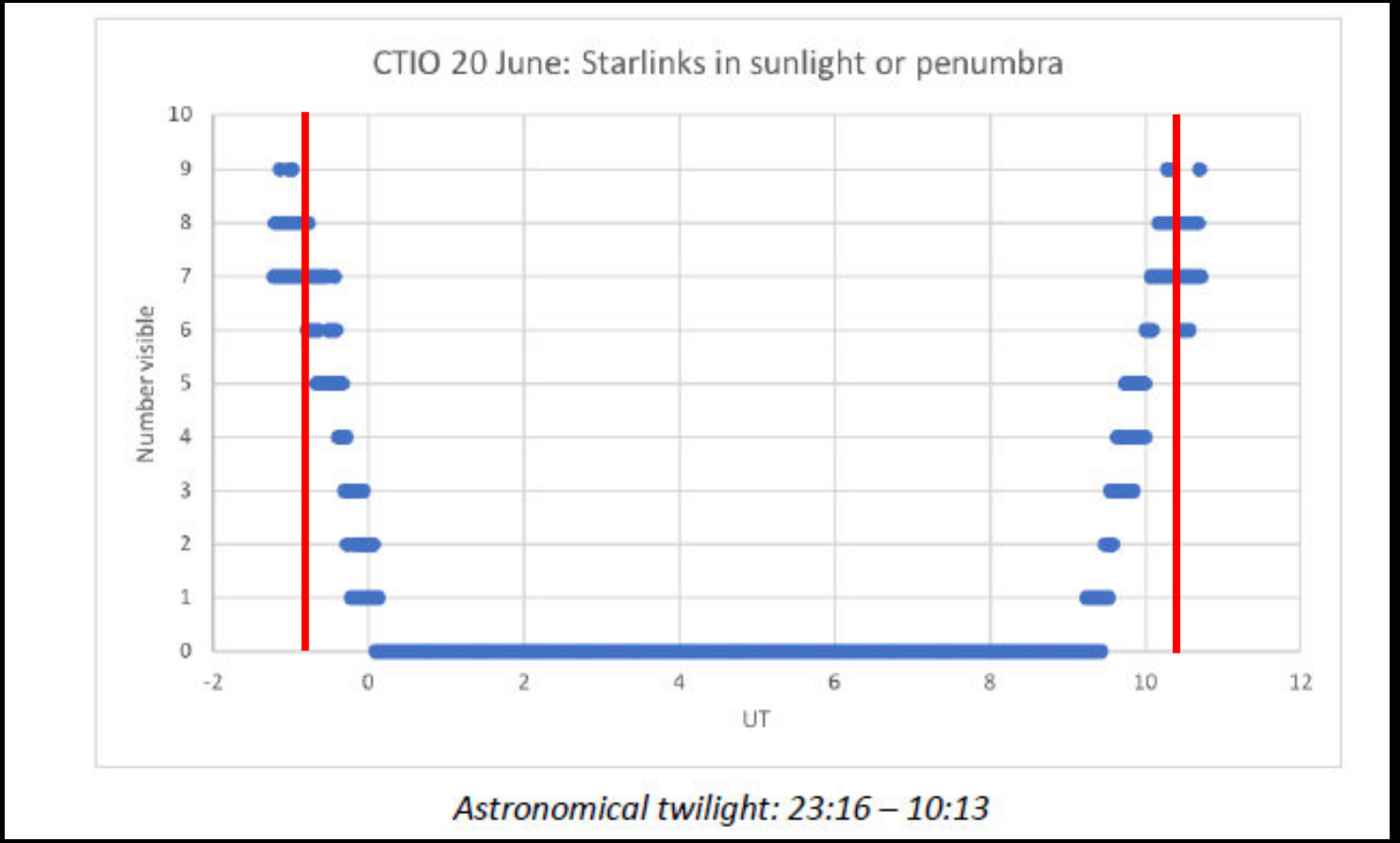
Interaction Structure & Principal Actions

May 28 – June 10, 2019:	AAS/IAU press releases
June – Sept 2019:	Modeling visibility & brightness *(P. Seitzer)*
June – Dec 2019:	8 telecons with SpaceX (non-NDA)
Dec 2019:	Community survey
Jan 2020:	AAS/IDA/SpaceX session at AAS 235
Also:	T. Tyson et al. & SpaceX (NDA)

Example of Initial Modeling (P. Seitzer)

1,584 satellites at 550 km, 24 planes with 66 satellites/plane

@CTIO:
6-9 satellites visible above 30 deg elevation, 60-90 minutes after sunset and before sunrise



AAS 235

Seitzer, Impey, Cooper, Hartley, Liszt

Hall, Seitzer, Hartley, Liszt, Fienberg

Patricia Cooper @ AAS 235

“SpaceX is committed to solving the problem for astronomy.”

Elon Musk @ Satellite 2020

“I am confident that we will not cause any impact whatsoever in astronomical discoveries. Zero. That’s my prediction. We will take corrective action if it’s above zero.”

Assessment and Next Actions

If only SpaceX & 1,583 satellites (2020 plan): astronomy OK

SatCon workshop (probably virtual) in June, NSF-supported

C. Walker & J. Hall, co-chairs

Detailed evaluation of DarkSat and modded sat brightnesses

Potential for other operators and demand-driven growth of constellations makes 2020 the “make or break” year