Description of Request

Planet Labs Inc. ("Planet Labs") hereby requests authority to operate an earth station located at 5190 30th St. NE, Maddock, North Dakota. The proposed earth station will transmit at 2056.0 MHz and 450.0 MHz, and receive in the 8025 – 8400 MHz band and at 401.3 MHz. The earth station will be in communications with the authorized Planet Labs Constellation of Non-Geostationary Orbit ("NGSO") Earth Exploration Satellite Service ("EESS") satellites. [1] The frequencies in this application have already been authorized for transmission and reception to and from the authorized Planet Labs Constellation (known as the "Flock" series of satellite constellations). [2]

The 8025-8400 MHz band, which is authorized for the Earth Exploration Satellite Service ("EESS"), is used as the primary space-to-Earth link. The 2025-2110 MHz band, which is authorized for EESS use subject to such conditions as may be applied on a case-by-case basis, is used as the primary Earth-to-space link.[3] The 401-402 MHz band, which is authorized for Space Operations on a secondary basis for non-federal users, is used as a secondary TT&C space-to-Earth link.[4] The 449.75-450.25 MHz band, which is authorized for space telecommand, subject to agreement obtained under No. 9.21, is used as a secondary TT&C Earth-to-space link.[5]

Planet Labs transmissions will not cause harmful interference to Federal and non-Federal stations operating in accordance with the Table of Frequency Allocations. Planet Labs also accepts any interference to it that is caused by those allocated services.

[1] *See* File No. SAT-LOA-20130626-00087 (approved 12/03/13), File No. SAT-MOD-20140321-00032 (approved 06/18/14), and File No. SAT-MOD-20140912-00100 (approved 10/23/14), Call Sign S2912.
[2] *Ibid*.
[3] *See* 47 C.F.R. § 2.106, footnote US347.
[4] *See* 47 C.F.R. § 2.106; In the Matter of Orbital Imaging Corporation, DA 99-353, at ¶¶ 3,8 (1999).
[5] *See* 47 C.F.R. § 2.106, footnote 5.286 and US87.

Additional Antenna Information

This Planet Labs earth station is comprised of two 5-meter parabolic "S/X-band" antennas controlled by X/Y rotators, and four "UHF" Yagi-Uda combination antennas. Each 5-meter parabolic antenna is housed inside a 7-meter radome. Each "UHF" Yagi-Uda combination antenna is unenclosed and is comprised of an "Uplink Yagi" and a "Downlink Yagi" mounted on a single cross-boom controlled by an Az/El rotator. Details are as follows:

Table 1 "S/X-band" 5-meter Parabolic Antenna Characteristics

Antenna	Manufacturer & Model	Antenna Diameter (m)	Peak Gain (dBi)	3dB Beamwidth (deg)	Polarization
S/X-band Parabolic	CGC 350SX(R)	5	50.4 @ X-band 39.0 @ S-band	0.25 @ X-band 1.0 @ S-band	RHCP

Table 2 "UHF" Yagi-Uda Antenna Characteristics

Antenna	Manufacturer & Model	# of elements	Antenna Length (m)	Peak Gain (dBi)	3dB Beamwidth (deg)	Polarization
Uplink Yagi	M2 Inc. 450CP34	17	2.7	16.5	30	RHCP
Downlink Yagi	M2 Inc. 400CP30	15	2.7	16.5	30	RHCP

Table 3 "S/X-band" 5-meter Parabolic Antenna Rotator Characteristics

Manufacturer	Type	Radome Diameter (m)
CGC	X/Y	7.2

Table 4 "UHF" Yagi-Uda Antenna Rotator Characteristics

Manufacturer & Model	Type	Mast Height (m)
Yaesu G5500	Az/El	2.5

Table 5 Site Characteristics

Site Address[6]	Latitude	Longitude	Site Elevation (m)	Max Antenna Height (m)
5190 30th St. NE Maddock, ND 58348	47° 50' 38.7" N	99° 28' 10.4" W	472.83 AMSL	7.0 AGL/ 479.83 AMSL

[6] Site will be remotely operated from Planet Labs, 346 9th St., San Francisco, CA 94103

Diagram of the Earth Station

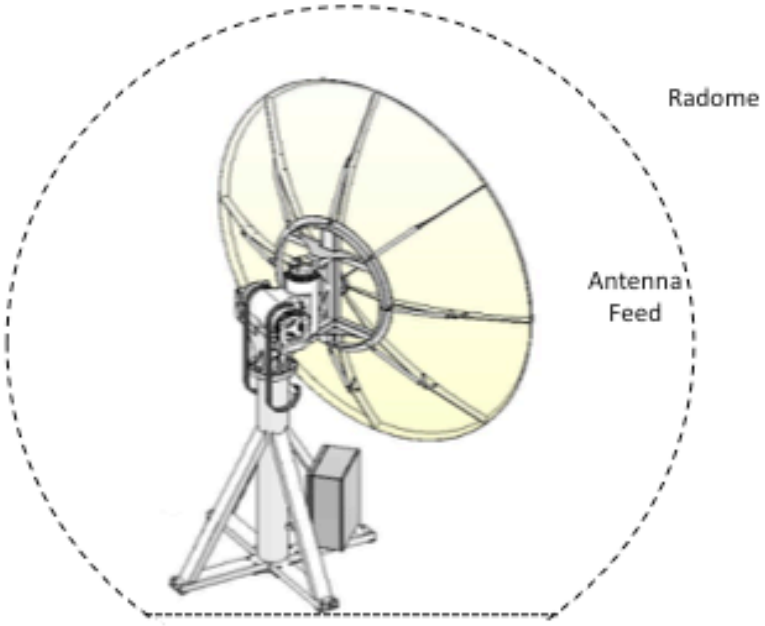

Figure 1 "S/X-band" 5-meter Parabolic Antenna

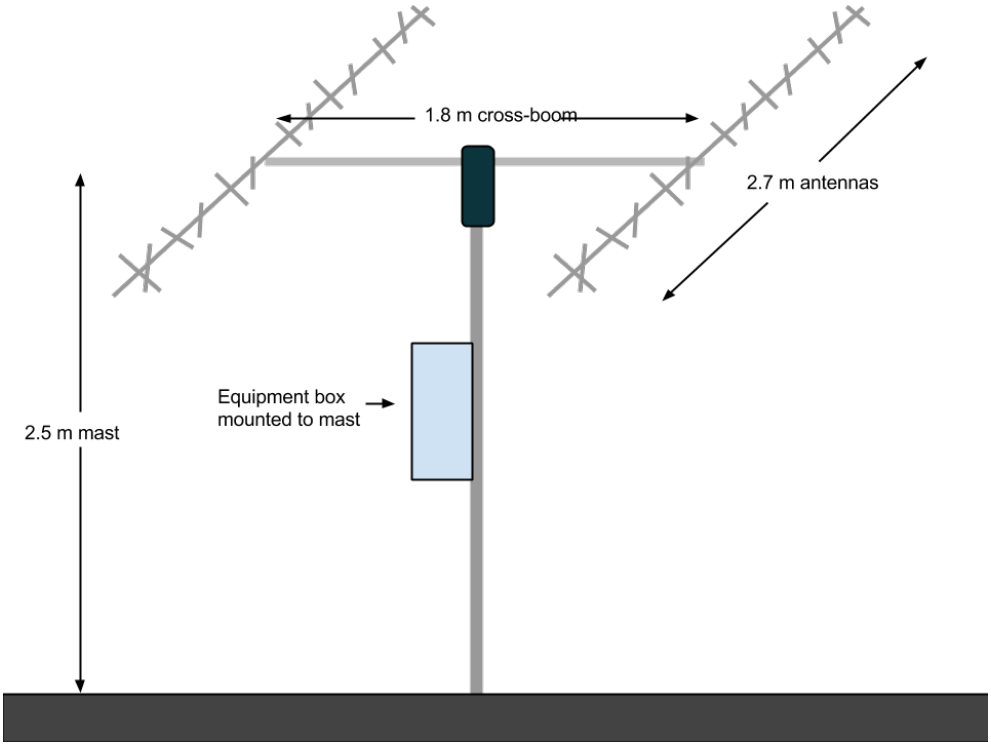

Figure 2 "UHF" Yagi-Uda Antenna