Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D. C. 20554

In the Matter of	)	
	)	SB Docket No. 25-201
Space Bureau Accepts for Filing	)	
AST & Science, LLC Modification	)	ICFS File No. SAT-MOD-20250612-00145
Application	)	
	)	S3065

PARTIAL OPPOSITION OF ARRL, THE NATIONAL ASSOCIATION FOR AMATEUR RADIO

ARRL, the National Association for Amateur Radio (ARRL), submits this Partial Opposition in response to the above-captioned application.[1] ARRL represents the interests of amateur radio operators in the United States.

In the above-referenced application AST & Science, LLC (AST) requests unprecedented authorization to 430-440 MHz for a constellation totaling 248 satellites to communicate with five ground stations using up to five channels with up to 256 kHz bandwidth. The stated purpose for these channels is for telemetry, tracking and command (TT&C). These frequencies would be in addition to the channels allocated and requested for this purpose.

For the reasons stated below, permission to use the 430-440 MHz band should be denied.

AST Does Not Demonstrate Need for TT&C Spectrum Beyond That Available Within Existing Allocations

In addition to its request for access to 430-440 MHz for TT&C, AST also requests access to the following frequency bands for the same purpose:

- 400-410 MHz,
- 2025-2110 MHz,
- 2200 – 2290 MHz, and
- 45.5 – 47.0 GHz.

[1] Space Bureau Accepts for Filing AST & Science, LLC Modification Application, SB Docket No. 25-201, ICFS File No. SAT-MOD-20250612-00145, Public Notice DA 25-532 (released June 20, 2025).

There is no apparent justification for this unprecedented incursion into the 430 – 440 MHz spectrum. Nor does AST appear to have coordinated with, or even notified, the International Amateur Radio Union (IARU) -- the spectrum coordinator for amateur satellites that operate in the 435 – 438 MHz band.

This request for an unallocated purpose is on the heels of a satellite spectrum proceeding in which the Commission addressed the spectrum needs of commercial satellites such as those being launched by AST and made spectrum allocations intended to meet those needs.[2] There is no explanation in the Application as to why the current spectrum arrangements and allocations are insufficient for the intended TT&C purposes. But if they are not sufficient, the Commission's rulemaking docket is the appropriate place for their consideration.

The Requested Spectrum Is Not Allocated for the Requested Purpose

The 430 – 440 MHz band is not allocated domestically or internationally for the requested space-to-Earth and Earth-to-space satellite TT&C operations. As others already have noted in this proceeding, signals in this band from AST's current 5-satellite constellation have been observed throughout the world, including in the United States, notwithstanding that the satellites are authorized to communicate only with five ground stations well outside the United States. From the operations by the current five satellites, it appears that the satellites at times have transmitted continuously in the 430 – 440 MHz band throughout their orbit, not just when in communication with one of the authorized ground stations. This activity defeats the purpose of preventing interference in the United States by limiting operations in this band to ground stations

[2] *See* FCC Ensures Commercial Space Launches Have Reliable Spectrum Resources, https://www.fcc.gov/document/fcc-ensures-commercial-space-launches-have-reliable-spectrum-resources-0; *see generally,* Allocation of Spectrum for Non-Federal Space Launch Operations; Amendment of Part 2 of the Commission's Rules for Federal Earth Stations Communicating with Non-Federal Fixed Satellite Service Space Stations; and Federal Space Station Use of the 399.9-400.5 MHz Band, ET Docket No. 13-115, RM-11341.

distant from the United States. Authorizing an additional 243 satellites to use this band, which would result in multiple satellites over the U.S. at all times, would effectively usurp this band's allocated use.

There appears to be no interference analysis filed by the applicant that relates to this band's specific use. This omission is particularly concerning with regard to concentrated amateur radio operations in Europe, where the Amateur allocation is primary and the application proposes to communicate with an earth station located in Europe (Bulgaria if authorized by the Bulgarian Administration).

Amateur satellites in this spectrum are coordinated by the International Amateur Radio Union (IARU). This application as well as prior use by AST under experimental licenses was not coordinated, nor noticed, to the IARU. Instead, AST responded to the effect that they were not required to do so because they were not proposing an amateur satellite. While their satellites most definitely are commercial, not amateur, such a response begs the question of how AST intends to avoid harmful interference to existing operations.

Compliance with the ITU Radio Regulations Treaty

The ITU Radio Regulations have treaty status and importantly, protect the communications of U.S. satellites and other spectrum users. Globally, the United States is the largest satellite authorizing administration and compliance with the ITU regulations has special importance for U.S. space concerns.

The basic premise of the ITU Radio Regulations treaty as set forth in No. 197 of Article 45 is that all radio stations, regardless of their purpose, must be operated in a way that avoids

causing harmful interference to other radio services and communications.[3] Article 4 at sections 4.2 and 4.4 seek to apply this requirement.

Article 4.2 requires adherence to the International Table of Allocations (International Table) if a frequency assignment would be ***capable*** of causing harmful interference to services in another country being conducted in compliance with the International Table.[4] Operation in the 430-440 MHz band clearly has such capability, especially with regard communicating with an earth station in crowded Europe where amateur operation is primary in the 430-440 MHz band.

Increasing the number of satellites from 5 to 248 greatly increases the capability for harmful interference. Nevertheless, the application says little in way of explaining how such interference will be avoided. Based upon the parameters in the application, we have concluded that avoiding harmful interference simply is not possible. Article 4.4, allowing non-conforming assignments provided that they are made on a non-interference basis, is not properly implicated in a case such as this where the probability of harmful interference to operations in another country is high. There is no interference analysis and finding that contradicts these concerns.[5]

[3] ITU Radio Regulations, Preamble, 0.4: "All stations, whatever their purpose, must be established and operated in such a manner as not to cause harmful interference to the radio services or communications of other Members or of recognized operating agencies, or of other duly authorized operating agencies which carry on a radio service, and which operate in accordance with the provisions of these Regulations (No. 197 of the Constitution)."

[4] ITU Radio Regulations, Article 4.2: "Member States undertake that in assigning frequencies to stations which are capable of causing harmful interference to the services rendered by the stations of another country, such assignments are to be made in accordance with the Table of Frequency Allocations and other provisions of these Regulations."

[5] ITU Radio Regulations, Article 4.4: "Administrations of the Member States shall not assign to a station any frequency in derogation of either the Table of Frequency Allocations in this Chapter or the other provisions of these Regulations, except on the express condition that such a station, when using such a frequency assignment, shall not cause harmful interference to, and shall not claim protection from harmful interference caused by, a station operating in accordance with the provisions of the Constitution, the Convention and these Regulations.

Conclusion

As licensing authority for the space transmissions of AST's satellites, it is the responsibility of the United States to not authorize use of spectrum not allocated for the purpose when interference to communications of other administrations may result. TT&C operations in the 430 – 440 MHz band is capable of causing harmful interference to radio amateur communications, including to amateur satellites operating in the 435-438 MHz subband, and therefore we request the Commission to deny use of the 430 – 440 MHz frequencies in the subject application.[6]

Respectfully submitted,

ARRL, THE NATIONAL ASSOCIATION FOR AMATEUR RADIO

225 Main Street
Newington, CT 06111

By:

David R. Siddall
ARRL Washington Counsel

DS LAW PLLC
1629 K St NW, Suite 300
Washington, DC 20006

July 21, 2025

[6] We do not address any of the other bands requested.

Certificate of Service

This is to certify that I, David Siddall, on July 21, 2025 served copies by email of the ARRL's Partial Opposition, SB Docket No. 25-201 and ICFS File No. SAT-MOD-20250612-00145, to:

Timothy L. Bransford
counsel to AST & Science, LLC
Greenberg Taurig, LLP
Timothy.bransford@gtlaw.com

and

Jennifer A. Manner
SVP, Regulatory Affairs and International Strategies
AST & Science, LLC
jennifer.manner@ast-science.com

David Siddall