Commercial Space Transportation License

License Number: LLS 18-112

ASTRA SPACE, INC.

is authorized, subject to the provisions of 51 USC Subtitle V, ch. 509, and the orders, rules, and regulations issued under it, to conduct a launch.

General. Astra Space, Inc. is authorized to conduct:

(i) A suborbital flight of the Rocket 1 launch vehicle from Launch Pad 2 at the Pacific Spaceport Complex – Alaska (PSCA); and

(ii) pre-flight ground operations at PSCA associated with the flight, as identified in paragraph (i) of this license, of the Rocket 1 launch vehicle.

This license is granted subject to the terms, conditions, and limitations set forth in licensing orders A, B, C, and D and any subsequent orders issued by the Office of Commercial Space Transportation.

The licensee shall at all times conduct its operations in accordance with the regulations prescribed by the Office of Commercial Space Transportation for the activities authorized by this license.

US Department
of Transportation
Federal Aviation Administration

800 Independence Ave., S.W.
Washington, D.C. 20591

Issued: **March 30, 2018**

Effective: **March 30, 2018**

Kenneth Wong

Manager, Licensing and Evaluation Division

OFFICE OF
COMMERCIAL SPACE TRANSPORTATION
LICENSE ORDER REGARDING

LAUNCH

AUTHORIZED BY LICENSE NO. LLS 18-112
ISSUED TO

ASTRA SPACE, INC.

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1. Authority: This Order is issued to Astra Space, Inc., referred to as Astra, under 51 U.S.C. subtitle V, chapter 509, and 14 C.F.R. Ch. III.

2. Purpose: This Order modifies License No. LLS 18-112 issued concurrently by the Federal Aviation Administration's Office of Commercial Space Transportation, authorizing Astra to conduct the launch of its Rocket 1 launch vehicle; and prescribes as conditions to License No. LLS 18-112 certain requirements applicable to the launch.

3. Definitions: For purposes of License No. LLS 18-112 and any orders issued by the FAA pertaining to activities covered by License No. LLS 18-112:

   (i) "Flight" shall mean the suborbital flight of the Rocket 1 launch vehicle, commencing with ignition of the first stage from Pacific Spaceport Complex - Alaska (PSCA). Flight is concluded upon the Rocket 1 vehicle impacting on Earth.

   (ii) "Pre-flight ground operations" shall mean Astra's pre-flight preparations of the Rocket 1 launch vehicle at PSCA, beginning with the arrival of the Rocket 1 at PSCA.

4. License Term: License No. LLS 18-112 terminates upon completion of the launch authorized by the license, or one (1) year from the effective date of this license order, whichever occurs first.

OFFICE OF COMMERCIAL SPACE TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

By: Kenneth Wong

Kenneth Wong, Manager
Licensing and Evaluation Division

Issued: March 30, 2018
Effective: March 30, 2018

License Order No. LLS 18-112B

OFFICE OF
COMMERCIAL SPACE TRANSPORTATION
LICENSE ORDER REGARDING

FLIGHT

AUTHORIZED BY LICENSE NO. LLS 18-112
ISSUED TO

ASTRA SPACE, INC.

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1. Authority: This Order is issued to Astra Space, Inc., referred to as Astra, under 51 U.S.C. subtitle V, chapter 509, and 14 C.F.R. Ch. III.

2. Purpose: This Order modifies License No. LLS 18-112 issued concurrently by the Federal Aviation Administration's Office of Commercial Space Transportation, authorizing Astra to conduct the launch of its Rocket 1 launch vehicle; and prescribes as conditions to License No. LLS 18-112 certain requirements applicable to the authorization to conduct the flight of this launch vehicle.

3. Authorization: Astra is authorized to conduct flights of the launch vehicle:

   (a) Using a Rocket 1 launch vehicle;

   (b) From Launch Pad 2 at Pacific Spaceport Complex - Alaska (PSCA);

   (c) On a nominal launch azimuth of 188.5 degrees;

   (d) Transporting an inert upper stage on a suborbital trajectory without a payload; and

   (e) According to the launch vehicle, launch vehicle systems, and safety management program represented in the Astra application as of the date of this order, and any amendments to the license application approved by the FAA, in writing.

OFFICE OF COMMERCIAL SPACE TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

By: Kenneth Wong

Kenneth Wong, Manager
Licensing and Evaluation Division

Issued: March 30, 2018
Effective: March 30, 2018

License Order No. LLS 18-112C

OFFICE OF
COMMERCIAL SPACE TRANSPORTATION
LICENSE ORDER REGARDING

PRE-FLIGHT GROUND OPERATIONS

AUTHORIZED BY LICENSE NO. LLS 18-112
ISSUED TO

ASTRA SPACE, INC.

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1. Authority: This Order is issued to Astra Space, Inc., referred to as Astra, under 51 U.S.C. subtitle V, chapter 509, and 14 C.F.R. Ch. III.

2. Purpose: This Order modifies License No. LLS 18-112 issued concurrently by the Federal Aviation Administration's Office of Commercial Space Transportation, authorizing Astra to conduct the launch of its Rocket 1 launch vehicle; and prescribes as conditions to License No. LLS 18-112 certain requirements applicable to the authorization to conduct pre-flight ground operations.

3. Authorization: Astra is authorized to conduct pre-flight ground operations at Pacific Spaceport Complex - Alaska (PSCA) associated with the launch of the Rocket 1 launch vehicle.

OFFICE OF COMMERCIAL SPACE TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

By: Kenneth Wong
Kenneth Wong, Manager
Licensing and Evaluation Division

Issued: March 30, 2018
Effective: March 30, 2018

License Order No. LLS 18-112D

OFFICE OF
COMMERCIAL SPACE TRANSPORTATION
LICENSE ORDER REGARDING

FINANCIAL RESPONSIBILITY REQUIREMENTS

Under License No. LLS 18-112
Issued to

ASTRA SPACE, INC.

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1. Authority: This Order is issued to Astra Space, Inc., referred to as Astra, under 51 U.S.C. Subtitle V, chapter 509, and 14 C.F.R. part 440.

2. Purpose: This Order modifies License No. LLS 18-112 issued concurrently by the Federal Aviation Administration's Office of Commercial Space Transportation, by prescribing financial responsibility requirements for licensed launch activities in accordance with 14 C.F.R. part 440.

3. Definitions: For purposes of this Order, "licensed launch activities" shall mean activities authorized by the License. Other terms used in this Order are defined in accordance with 14 C.F.R. § 440.3.

4. Liability Insurance: Astra shall maintain a policy or policies of liability insurance (or otherwise demonstrate financial responsibility) in accordance with 14 C.F.R. § 440.9(b) in the amount of:

   (a) Nine Million Dollars ($9,000,000) for covered claims resulting from flight of the Astra Launch Vehicle from Pacific Spaceport Complex - Alaska (PSCA), and

   (b) Three Million Dollars ($3,000,000) for covered claims resulting from pre-flight operations performed at PSCA.

5. Demonstration of Compliance: Astra must submit to the FAA evidence of financial responsibility and compliance with allocation of risk requirements in accordance with § 440.15, no later than fifteen (15) days prior to the launch conducted under this license.

OFFICE OF COMMERCIAL SPACE TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

By: Kenneth Wong

Kenneth Wong, Manager
Licensing and Evaluation Division

Issued: March 30, 2018
Effective: March 30, 2018

U.S. Department
of Transportation
**Federal Aviation
Administration**

Office of the Associate Administrator for
Commercial Space Transportation

800 Independence Ave., SW.
Washington, DC 20591

March 26, 2018

Mr. Milton Keeter
Head of Safety
Astra Space, Inc.
1690 Orion Street
Alameda, CA 94501

Dear Mr. Keeter:

I am pleased to issue you a launch-specific license, LLS 18-112, and accompanying license orders authorizing Astra Space, Inc. to conduct the launch of the Rocket 1 launch vehicle from Launch Pad 2 at Pacific Spaceport Complex – Alaska (PSCA). This launch is a test flight transporting an inert upper stage on a suborbital trajectory without a payload.

Before flight, Astra must comply with all applicable requirements of Title 14 CFR chapter III, including the requirements of part 417. These include the following information and data items, to be submitted to us, as inspectable items, prior to the Rocket 1 launch:

- Final mission constraints, flight rules, and abort rules, as part of the Rocket 1 mission;
- Final launch rehearsal procedures, including hazardous operations surveillance and clearance for mission; and
- Signed LOA with FAA Air Traffic in accordance with § 417.111 (i) prior to launch.

The financial responsibility requirement in License Order No. LLS 18-112D for liability insurance for covered claims resulting from pre-flight operations performed at PSCA is based on the assumption that no more than two (2) third party individuals will be exposed to hazardous operations at any time. For the purposes of our financial responsibility requirements, employees and contractors of the U.S. Government supporting launch operations are considered third parties. Please be aware that the FAA regulations do not require financial responsibility for state government property; we therefore recommend that you notify the State of Alaska that while its property may be subject to damage, the FAA has no requirement for you to insure such state property.

We plan to evaluate the effectiveness of the Notices to Mariners, and then have a subsequent discussion with you about ship safety, after your first launch.

Furthermore, as a reminder, Astra must be in compliance of 14 CFR § 417.111(e), for its configuration management and control plan.

Please note that in accordance with 14 CFR § 417.11, a launch operator must apply to the FAA for modification of its launch license if it proposes to conduct a launch or carry out a launch safety procedure or operation in a manner that is not authorized by the license.

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U.S. Department
of Transportation
**Federal Aviation
Administration**

Office of the Associate Administrator for
Commercial Space Transportation

800 Independence Ave., SW.
Washington, DC 20591

March 30, 2018

delete one line

Mr. Milton Keeter
Head of Safety
Astra Space, Inc.
1690 Orion Street
Alameda, CA 94501

Dear Mr. Keeter:

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