

THE VEHICLE

THE SATELLITE

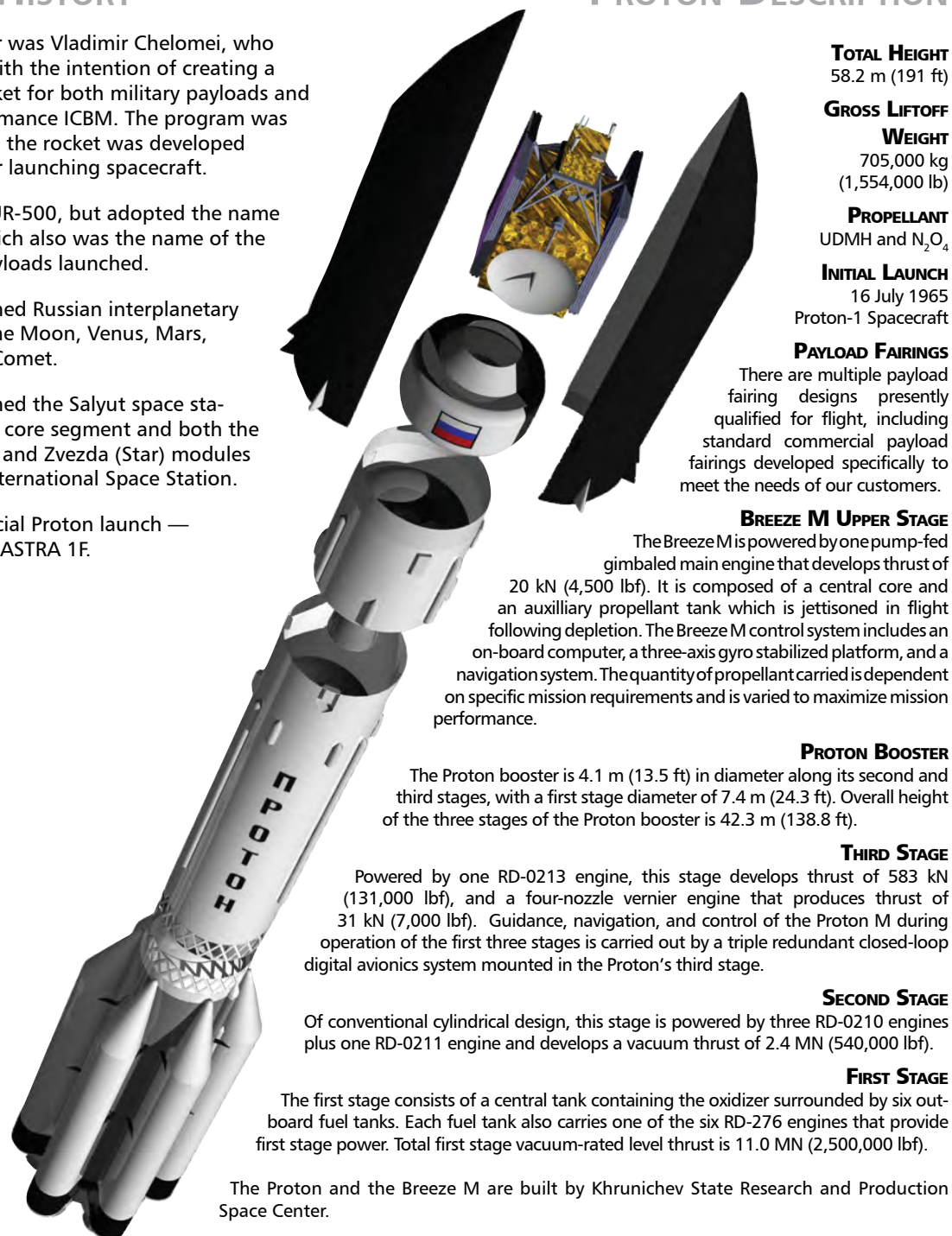


www.ilslaunch.com

PROTON HISTORY

- Lead designer was Vladimir Chelomei, who designed it with the intention of creating a powerful rocket for both military payloads and a high-performance ICBM. The program was changed, and the rocket was developed exclusively for launching spacecraft.
- First named UR-500, but adopted the name "Proton," which also was the name of the first three payloads launched.
- Proton launched Russian interplanetary missions to the Moon, Venus, Mars, and Halley's Comet.
- Proton launched the Salyut space stations, the Mir core segment and both the Zarya (Dawn) and Zvezda (Star) modules for today's International Space Station.
- First commercial Proton launch — 9 April 1996, ASTRA 1F.

PROTON DESCRIPTION



SATELLITE OPERATOR

SIRIUS XM Radio
www.sirius.com

SATELLITE MANUFACTURER

Space Systems/Loral
www.ssloral.com

PLATFORM

LS-1300

SEPARATED MASS

5820 kg

SATELLITE DESIGN LIFE

15 Years

SATELLITE MISSION

SIRIUS XM Radio is America's satellite radio company delivering commercial-free music channels, premier sports, news, talk, entertainment, traffic and weather to millions of subscribers. The SIRIUS XM FM-5 satellite will supplement the existing fleet of SIRIUS satellites with a high-power geostationary satellite that enhances the listening experience. It will ensure SIRIUS XM's array of audio and data services are received robustly by cars and mobile devices, improve the signal delivery to homes, and bolster the continuity of our service for years to come. SIRIUS XM is installed in vehicles of every major automaker and available for sale at retail locations nationwide. SIRIUS XM offers SIRIUS Backseat TV, the first live in-vehicle rear seat entertainment, featuring Nickelodeon, Disney Channel and Cartoon Network, as well as XM NavTraffic® service for GPS navigation systems, delivering real-time traffic information to markets across North America.



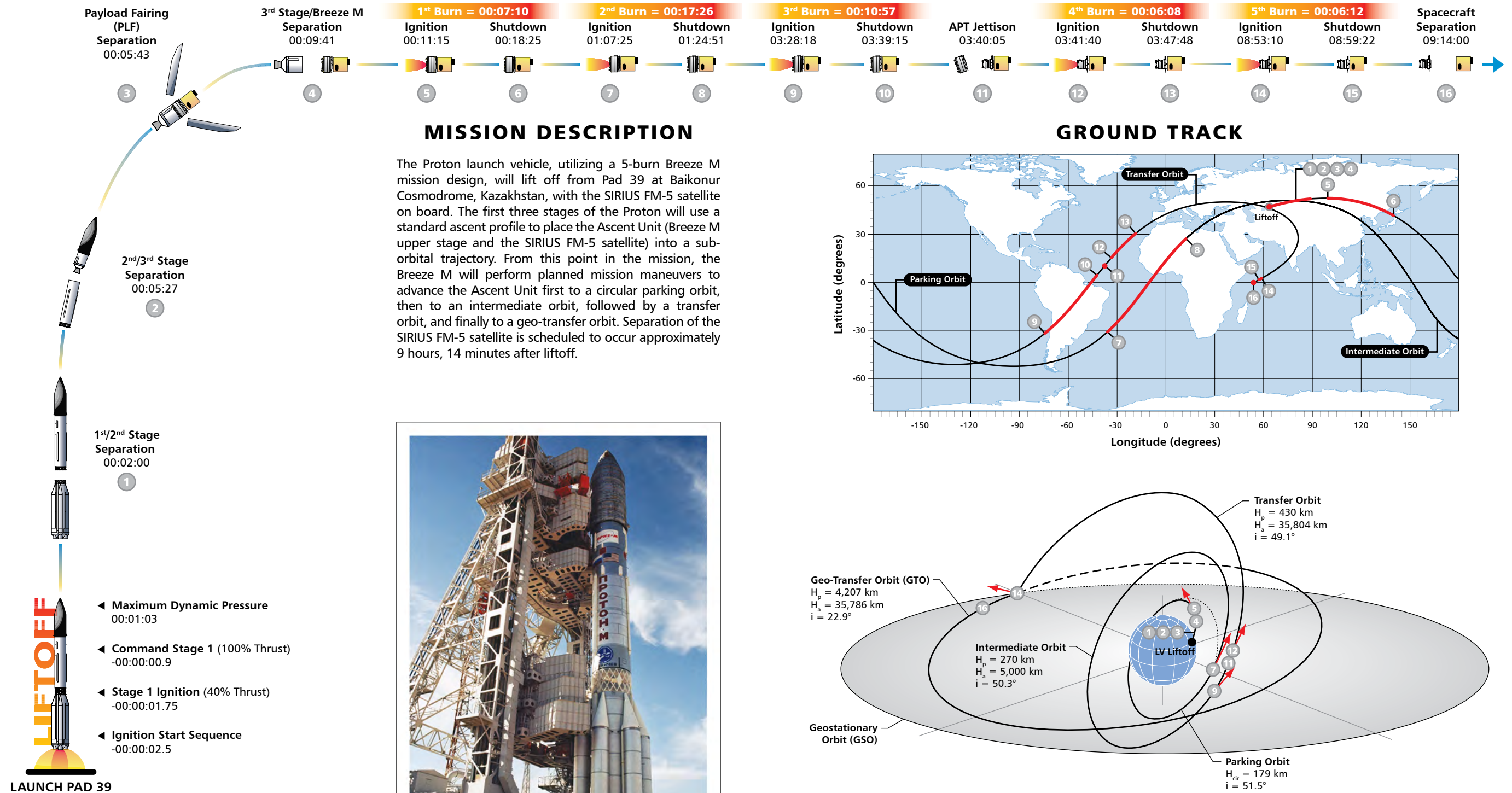
SIRIUS FM-5

MISSION OVERVIEW

- 5th Proton Launch of 2009 / 3rd ILS Proton
- 52nd Proton Launch for ILS
- 4th SIRIUS XM Satellite Launched on a Proton
- 11th Space Systems/Loral Satellite Launched on a Proton



THE MISSION

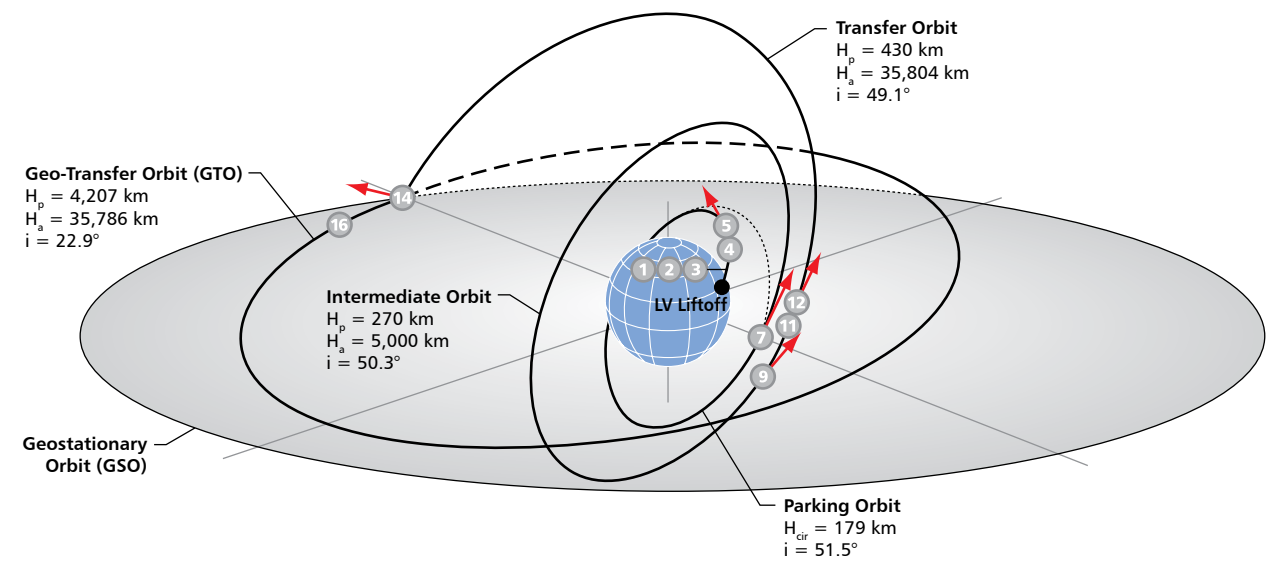
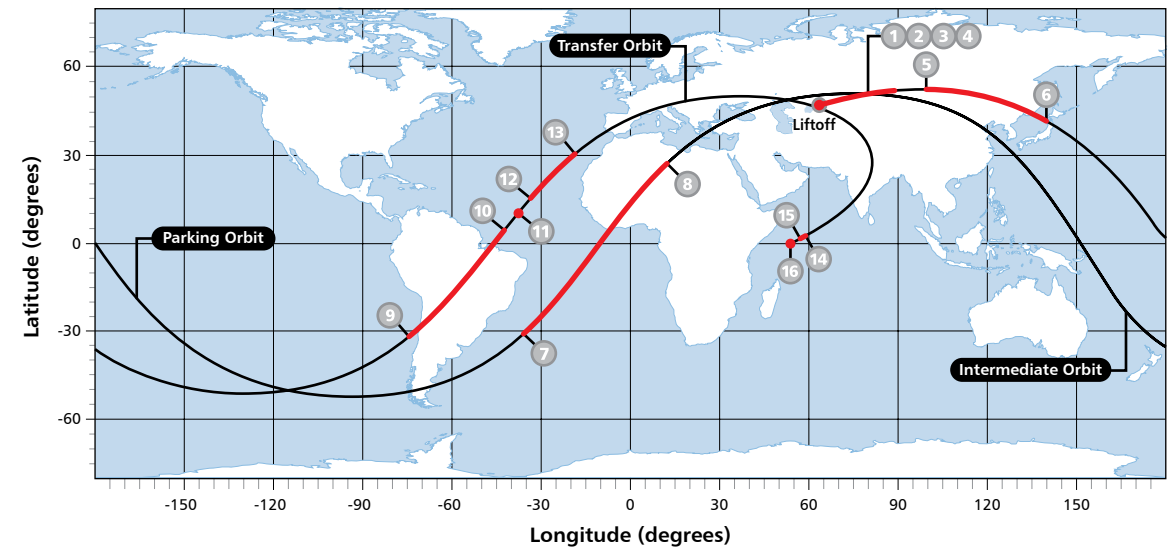


MISSION DESCRIPTION

The Proton launch vehicle, utilizing a 5-burn Breeze M mission design, will lift off from Pad 39 at Baikonur Cosmodrome, Kazakhstan, with the SIRIUS FM-5 satellite on board. The first three stages of the Proton will use a standard ascent profile to place the Ascent Unit (Breeze M upper stage and the SIRIUS FM-5 satellite) into a sub-orbital trajectory. From this point in the mission, the Breeze M will perform planned mission maneuvers to advance the Ascent Unit first to a circular parking orbit, then to an intermediate orbit, followed by a transfer orbit, and finally to a geo-transfer orbit. Separation of the SIRIUS FM-5 satellite is scheduled to occur approximately 9 hours, 14 minutes after liftoff.



PROTON ON PAD 39



ORBIT INSERTION

ASCENT PROFILE