

H-IIA Launch Vehicle

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Dec. 23, 2017 Updated

Successful Launch, H-IIA Launch Vehicle No. 37 Encapsulating SHIKISAI and TSUBAME



The H-IIA Launch Vehicle No. 37 with the Global Changing Observation Mission - Climate "SHIKISAI" (GCOM-C) and the Super Low Altitude Test Satellite "TSUBAME" (SLATS) onboard lifted off at 10:26:22 a.m. on December 23, 2017 (Japan Standard Time) from the Tanegashima Space Center. The launch and flight of H-IIA F37 proceeded as planned. So did the separation of SHIKISAI and TSUBAME, which was confirmed respectively at approximately 16 minutes and 13 seconds and 1 hour and 47 minutes 59 seconds ...

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Dec. 23, 2017 (13:45) [release]

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Dec. 21, 2017 (14:00) [release]

[Launch Time and Window, H-IIA F37 \(with upgraded function\) Encapsulating SHIKISAI and TSUBAME](#)

About H-IIA Launch Vehicle



Leading edge, efficient and economical technology Japanese main large-scale launch vehicle, H-IIA

H-IIA, Japan's primary large-scale launch vehicle, is designed to meet diverse launch demands, at lower cost and with a high degree of reliability, by making the best use of the [H-II launch-vehicle](#) technology. The simplified design and improved efficiency of the manufacturing and launch processes of H-IIA have achieved one of the highest performance to cost ratio of launch system in the world, reducing the cost of launches by a half or more.

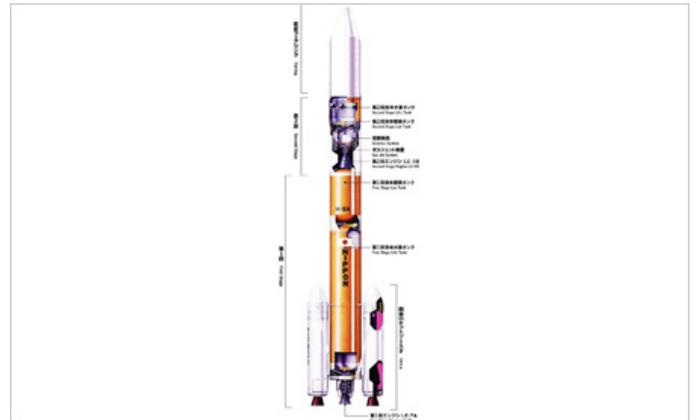
H-IIA launch service operations have been transferred to Mitsubishi Heavy Industries, LTD. ahead of the launch of H-IIA Flight 13. JAXA is in charge of launch safety management (including ground safety confirmation, flight safety assurance, and overall countdown control and supervision.)

JAXA is conducting the [H-IIA upgrade project](#) to improve the H-IIA launch capability and its global competitiveness.

Major Characteristics

Major Specifications of the H-IIA launch vehicle

| | |
|------------------|----------------------------|
| Length (m) | 53 |
| Liftoff mass (t) | 289 (without payload mass) |
| Guidance Method | Inertial Guidance Method |



[Large Image](#)

| | Item | | | | |
|---------------------------|---|--|--|--|---------|
| | First Stage | SRB-A | SSB | Second Stage | Payload |
| Length (m) | 37.2 | 15.1 | 14.9 | 9.2 | 12 |
| Diameter (m) | 4 | 2.5 | 1 | 4 | 4.07 |
| Mass (t) | 114 | 151 (2 units) | 31 (2 units) | 20 | 1.4 |
| Propellant mass | 101.1 | 130 (2 units) | 52.4 (4 units) | 16.9 | - |
| Thrust (KN) | 1,098 | 5,040 (2 units) | 1,490 (2 units) | 137 | - |
| Burning time (s) | 390 | 100 | 60 | 530 | - |
| Propellant | Lox/LH2 | Polybutadiene composite solid propellant | Polybutadiene composite solid propellant | Lox/LH2 | - |
| Propellant Loading Method | Turbo pump | - | - | Turbo pump | - |
| Specific Impulse (s) | 440 | 283 | 282 | 448 | - |
| Attitude control method | Gimbal engine system Auxiliary engine | Gimballed nozzle system | Gimballed nozzle system | Gimbal engine system Gas jet system | - |
| Avionics | Control Systems, Telemetry Transmitter | - | - | Guidance Navigation, and Control Systems, Rader Transponder, Telemetry Transmitter, Command Destruct Receiver | - |

Launch Capability (H-IIA Standard)

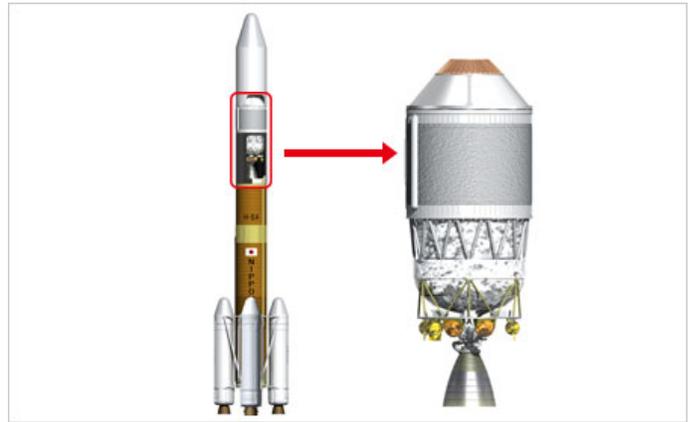
Improved function and performance

- (1) Enhanced launch capacity of a geostationary satellite
 By increasing the duration of flight time and the number of engine ignitions, more flexible flight patterns become possible, and the launch capability of a geostationary satellite is also increased.

H-IIA UPGRADE - Moving to a new stage

Enhanced launch performance to cope with geostationary satellite launch ?
 Adopting it to the H-IIA Launch Vehicle No. 29

- (2) Easing the onboard environmental restriction for payloads
 The onboard environment has been improved for payloads to among the highest levels in the world by adopting a mechanism that is not based on pyrotechnics.



Reducing maintenance/renovation costs of facility

- (3) Simplified ground facility
 Ground tracking radars are no longer necessary as the onboard flight safety navigation sensor was developed.

Launch Records

| Flight No. | Model | Launch Date | Payload |
|-----------------------------------|--------|-------------|--|
| F35 | H2A204 | 8/19/2017 | Quasi-Zenith Satellite-3 "MICHIBIKI No. 3" |
| F34 | H2A202 | 6/1/2017 | Quasi-Zenith Satellite-2 "MICHIBIKI No. 2" |
| F33 | H2A202 | 3/17/2017 | IGS (Information Gathering Satellites) |
| F32 | H2A204 | 1/24/2017 | X-band defense communication satellite-2 |
| F31 | H2A202 | 11/2/2016 | Geostationary Meteorological Satellite "Himawari-9" |
| F30 | H2A202 | 2/17/2016 | X-ray Astronomy Satellite "Hitomi" (ASTRO-H) |
| H-IIA UPGRADE F29 | H2A204 | 11/24/2015 | Telstar 12 VANTAGE |
| F28 | H2A202 | 3/26/2015 | IGS (Information Gathering Satellites) |
| F27 | H2A202 | 2/1/2015 | IGS (Information Gathering Satellites) |
| F26 | H2A202 | 12/3/2014 | Asteroid Explorer "Hayabusa2" |
| F25 | H2A202 | 10/7/2014 | Geostationary Meteorological Satellite "Himawari-8" |
| F24 | H2A202 | 5/24/2014 | Advanced Land Observing Satellite-2 "DAICHI-2" (ALOS-2) |
| F23 | H2A202 | 2/28/2014 | Global Precipitation Measurement/Dual-frequency Precipitation Radar (GPM/DPR) |
| F22 | H2A202 | 1/27/2013 | IGS (Information Gathering Satellites) |
| F21 | H2A202 | 5/18/2011 | Global Change Observation Mission 1st - Water "SHIZUKU" (GCOM-W1) Small Demonstration Satellite-4 (SDS-4) |

| | | | |
|-----|---------|------------|--|
| F20 | H2A202 | 12/12/2011 | IGS (Information Gathering Satellites) |
| F19 | H2A202 | 9/23/2011 | IGS (Information Gathering Satellites) |
| F18 | H2A202 | 9/11/2010 | Quasi-Zenith Satellite-1 "MICHIBIKI" |
| F17 | H2A202 | 5/21/2010 | Venus Climate Orbiter "AKATSUKI" (PLANET-C) Interplanetary Kite-craft Accelerated by Radiation Of the Sun "IKAROS" |
| F16 | H2A202 | 11/28/2009 | IGS (Information Gathering Satellites) |
| F15 | H2A202 | 1/23/2009 | Greenhouse gases Observing SATellite "IBUKI" (GOSAT) Small Demonstration Satellite-1 (SDS-1) |
| F14 | H2A2024 | 2/23/2008 | Wideband InterNetworking engineering test and Demonstration Satellite "KIZUNA" (WINDS) |
| F13 | H2A2022 | 9/14/2007 | SELenological and ENgineering Explorer "KAGUYA" (SELENE) |
| F12 | H2A2024 | 2/24/2007 | IGS (Information Gathering Satellites) |
| F11 | H2A204 | 12/18/2006 | Engineering Test Satellite VIII "KIKU No.8" (ETS-VIII) |
| F10 | H2A202 | 9/11/2006 | IGS (Information Gathering Satellites) |
| F9 | H2A2024 | 2/18/2006 | Multi-functional Transport Satellite-2 "Himawari-7" (MTSAT-2) |
| F8 | H2A2022 | 1/24/2006 | Advanced Land Observing Satellite "Daichi" (ALOS) |
| F7 | H2A2022 | 2/26/2005 | Multi-Functional Transport Satellite-1 Replacement "Himawari-6" (MTSAT-1R) |
| F6 | H2A2024 | 11/29/2003 | IGS (Information Gathering Satellites) * H-IIA F6 was consequently destroyed by a destruction command from the ground as the vehicle did not gain enough height and speed due to the failure. |
| F5 | H2A2024 | 3/28/2003 | IGS (Information Gathering Satellites) |
| F4 | H2A202 | 12/14/2002 | Advanced Earth Observation Satellite-II "Midori II" (ADEOS-II) Engineering Test Satellite "Micro-LabSat" Whale Ecology Observation Satellite (WEOS) Federation Satellite (FedSat) |
| F3 | H2A2024 | 9/10/2002 | Data Relay Test Satellite "KODAMA" (DRTS) Unmanned Space Experiment Recovery System (USERS) |
| TF2 | H2A2024 | 2/4/2002 | Mission Demonstration test Satellite-1 "TSUBASA" (MDS-1) H-IIA Vehicle Evaluation Payload #3 (VEP-3) DASH (Demonstrator of Atmospheric Reentry System with Hyper Velocity) |
| TF1 | H2A202 | 8/29/2001 | Laser Ranging Equipment (LRE) H-IIA Vehicle Evaluation Payload #2 (VEP-2) |

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Mar. 8, 2005

[H-IIA Launch Vehicle No.6 Why did the accident happen? The latter part](#)



Nov. 18, 2004

[H-IIA Launch Vehicle No.6 Why did the accident happen? The first part](#)

Pamphlet

[H-IIA Launch Vehicle](#)  (4.8MB)

[H-IIA Upgrade](#)  (3.1MB)

Reference

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[Mitsubishi Heavy Industries\(MHI\) H-IIA Launch Service](#)

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