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Rocket's fiery plume seen from Levy County; *United Launch Alliance sends satellite into orbit*



This still shot shows the flame plume of the Atlas V rocket as seen from Levy County on Friday night (Jan. 19).

Story, Photo and Video

By Jeff M. Hardison © Jan. 21, 2018 at 8:57 p.m.

CARTER'S CROSSROADS -- Launch fever burned hot in Jemlands -- an unrecorded subdivision in the unincorporated political subdivision known as Levy County in Florida -- as Jeff and Sharon Hardison planned to observe a rocket flying on Thursday and Friday nights (Jan. 18 and 19).

“Yes,” Jeff Hardison said, “we were revved for an Atlas V rocket launch viewing just as we are excited about the launch of *HardisonInk.com*’s eighth year, which begins Feb. 1. Our theme this year is ‘**Let’s Keep It Great At 8.**’”

The couple drove to Carter’s Crossroads Convenience Store at the intersection of State Road 345 and Levy County Road 347 to see the rocket plume as it crossed the dark sky.

They went looking into the sky from an area near that landmark convenience store on Thursday night and Friday night. They had permission from the Carter family.

The launch was scrubbed by the National Aeronautics and Space Administration (NASA) and United Launch Alliance (ULA) due to an equipment issue Thursday night before the planned launch.

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https://youtu.be/_q2oh3GhMvU

In this narrated one-minute, 51-second video, there is a view of the flames shooting from an Atlas V rocket as it takes a payload into space on Friday night (Jan. 19). This is a view from Levy County, which is approximately 180 miles away from the launch site of Cape Canaveral Air Force Base. The video is relatively unstable, because the videographer was shooting without the use of a tripod and he was using a long lens that amplified any movement.

The Hardisons' mission was cancelled Thursday evening by Jeff Hardison at 8 p.m., when he did not see a plume.

"Either the rocket did not go up, or it went up and we could not see it from here," Jeff Hardison said. "I've seen launches from various points in Florida. I've been as close as watching from NASA-controlled property, to a beach across a lagoon from a launch pad, to a motel balcony overlooking the Atlantic Ocean in Satellite Beach, to points in Pinellas, Charlotte and Glades counties and elsewhere.

"As a University of Florida student," Hardison said, "I left Gainesville and went to a mangrove-covered sandy beach on the East Coast on April 12, 1981, with some other students. We watched the first-ever space shuttle Columbia as it lifted off with astronauts John W. Young, commander, and Robert L. Crippen, pilot. Columbia lifted off from Pad A, Launch Complex 39, at the Kennedy Space Center. We were so close to the site our bodies vibrated from the air being shaken."

Hardison said he and his lovely and talented wife Sharon went to LC 39 decades later, on a paid tour in the late 20th century or early 21st century. Then he took a paid tour in 2017 as well as watched a launch with other journalists in 2017.

Sharon Hardison observed a launch from Cocoa Beach as her husband was on the NASA site in 2017. Her video was used in coverage of that event.

"I've had a couple of practice sessions with video at night and in the daytime," Hardison said. "I have a relatively strong probability of making a better video in my next attempt."

As for the viewing environment from the right-of-way next to the area east of SR 345, near Carter's Crossroads Convenience Store and on the south side of CR 347 (next to the area where there have been bull-riding events in the past), the air seemed clearer on Thursday night. The temperature was colder Thursday night than on Friday night in the Tri-County Area of Levy, Dixie and Gilchrist counties.

It was below freezing at that time on Thursday night and above freezing on Friday night, although it later became 29 degrees Fahrenheit by early Saturday morning in that part of Levy County, according to various thermometers.

"I have watched more rockets in more places with just me and Sharon," Jeff Hardison said, "than with anyone else. It's always good for me, whether I am with journalists, a group of people or if it's just me and Sharon. The best viewing group, though, always has Sharon in it from my perspective."

As always, the science-oriented journalist enjoys sharing information about a launch.

Aerojet Rocketdyne played a big part in the rocketing aspects of this launch, according to information from that company.

"The launch of the Space Based Infrared System (SBIRS) Geosynchronous Earth Orbit satellite 4 (GEO Flight-4) aboard a United Launch Alliance (ULA) Atlas V rocket from Cape

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Canaveral Air Force Station featured the Aerojet Rocketdyne propulsion systems in all of its phases,” the company notes on its website.

“The added power from the single AJ-60A reduced the amount of fuel needed by the rocket’s Centaur upper stage to place the Lockheed Martin-built SBIRS GEO Flight-4 satellite into its proper transfer orbit,” the company notations added. “Once the satellite separated, the Centaur had sufficient fuel left over to propel itself into the ocean, so that it will not pose a collision threat to spacecraft in an increasingly congested orbital environment.

“As space becomes increasingly congested, it is important to recognize propulsion systems play an important role in supporting efforts to minimize orbital congestion that otherwise could hamper future operations,’ said Eileen Drake, CEO and president of Aerojet Rocketdyne,” the website’s writer noted in its informational piece.

The writer of information on that website shared more information.

“The Centaur is powered by Aerojet Rocketdyne’s RL10C-1 upper-stage engine, which generates 22,890 pounds of thrust. Variants of the RL10 have been in service for more than 50 years on multiple vehicles, including ULA’s current Delta IV, which is used along with the Atlas V to launch the vast majority of U.S. national security satellites,” that writer noted.

“Both stages of the Atlas V used Aerojet Rocketdyne-supplied helium pressurization tanks, while the company’s 12 MR-106 hydrazine thrusters provided roll, pitch and yaw control, as well as settling burns, for the Centaur’s phase of the mission,” the writer continued.

“Aerojet Rocketdyne’s propulsion products were not limited to the launch vehicle,” the writer added. “The SBIRS GEO Flight-4 satellite is equipped with 18 Aerojet Rocketdyne hydrazine thrusters that will maintain its orbit and orientation during a mission lasting up to 12 or more years. These include 12 MR-103 thrusters providing .2 pounds of thrust each, and six MR-106L hydrazine thrusters, each providing 5 pounds of thrust. In addition to maintaining the satellite in its orbital position, these thrusters provide attitude control during orbit raising as well as the boost needed to decommission the satellite at the end of its service life.”

“Built by Lockheed Martin Space, SBIRS consists of a network of satellites in geosynchronous orbit, sensors in highly elliptical orbit and a sophisticated ground control system,” the writer noted. “The SBIRS’ primary mission is to provide timely warning of missile launches throughout the world. Other SBIRS missions include missile defense, battlespace awareness and technical intelligence gathering. Once it completes on-orbiting testing, GEO Flight-4 will round out the initial SBIRS constellation, providing global coverage.

“The SBIRS satellites help safeguard the nation’s homeland and deployed forces against the threat of ballistic missile attacks. It is critical to have reliable propulsion systems on every satellite to ensure they maintain a watchful eye and are able to detect a threat at a moment’s notice,’ added Drake,” the website writer noted.

As for the view from Levy County of the liftoff that started 180 miles away to the south-southeast, once it got above the local treetops, it was pretty neat, Jeff and Sharon Hardison agreed.

“Near the start of the seventh year of *HardisonInk.com*,” Hardison said, “I linked the launch of a rocket with the launch of our next year. My video in this final part of Year Seven was interesting. I am hoping for another chance to ‘Keep It Great At 8’ after Feb. 1, with the potential of a better rocket launch video.”