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SES SIRIUS 4 Blog

SES Sirius 4 Blog



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Thank You!

Thanks for following along on the Sirius 4 blog. ILS is grateful for your continued enthusiasm and support for Proton. We'll see you on our next mission.

The Sirius 4 blog and photo album will be available until November 30, when they will be archived to PDF and posted to the [Sirius 4 launch archive page](#).

Note if you would like to review the full webcast of the launch, just [click here](#).

Posted 20 November 2007

[0 comments](#)

Posted By: ILS Communications Team at 13:54 EST

Launch Day Recap

You know it is launch day when you get down to the final milestone moments. One is the traditional blessing of the rocket by a Russian priest. A small group of team members, including most of the SES customers, was present for this unique ceremony. As seen in this photo, a cold, dense fog settled in for launch day, adding to the moisture experienced when the attendees were also blessed. As challenging as rocket launching is, we look toward every advantage to help us succeed.



Later that evening, we attended the State Commission Meeting for Launch Readiness. This was the final opportunity for all the agencies involved in the launch to express their readiness to fuel the Proton and to continue with the launch processing. A positive conclusion was reached and the countdown was cleared to continue. Hours later, the mighty Proton Breeze M launch vehicle roared upward, right on schedule. While the acoustic show was spectacular, few observers actually saw the rocket ascending due to the dense fog that was still present.

Undeterred by fog, the rocket achieved its goal of placing the SIRIUS 4 satellite into its proper target orbit. By all indications, the launch was fully successful and the satellite is healthy. This one clearly goes in the "Win" Column.

Posted 18 November 2007

[0 comments](#)

Posted By: ILS Sirius 4 Launch Team at 22:00 Baikonur

Separation

We have just been notified that the fourth, and final, burn sequence has been completed. The Proton Breeze M carrying SES' Sirius 4 has placed the satellite in orbit. ILS' mission is now complete.

Thank you for joining us for another successful mission!

[Click here](#) for a complete press release.

Posted 18 November 2007

[0 comments](#)

Posted By: ILS Communications Team at 03:35 EST

Third Burn in the Books

The Proton Breeze M has just successfully completed its third burn and shutdown phase, including jettison of the Additional Propellant Tank (APT). The Breeze M will complete a fourth ignition/shutdown sequence, which should complete in about five and a half hours.

Posted 17 November 2007

[0 comments](#)

Posted By: ILS Communications Team at 22:00 EST

Second Burn Complete

We have just received word of a second burn and shutdown of the Breeze M upper stage. Next up will be the third burn and subsequent shutdown, which should be in just under two and a half hours from now.

Posted 17 November 2007

[0 comments](#)

Posted By: ILS Communications Team at 19:41 EST

We Have Liftoff!

The ILS Sirius 4 Launch Team is proud to announce successful liftoff of Proton Breeze M carrying the Sirius 4 satellite! Liftoff occurred at 17:39 EST (04:39 Baikonur, 22:39 GMT).

Proton's three stages, including payload fairing jettison, have performed flawlessly. The Breeze M upper stage, which has had its first burn and is presently in a circular parking orbit, will now complete the mission. We'll let you know when we receive confirmation of the Breeze M second burn. That should be in about an hour.

[Click here](#) for launch highlight video clips.

Posted 17 November 2007



[2 comments](#)

Posted By: ILS Communications Team at 18:07 EST

The Home Stretch



will be ready to "light that candle". Clearly, we have entered the home stretch and the end is in sight.

While we were visiting the school, the Breeze M fueling was completed and the next morning, as noted in the previous post from Khrunichev, the ILV was rolled out to Launch Pad 39. A large portion of the launch team was at the pad for the ILV arrival and we watched in awe as the rocket was rotated from horizontal to vertical and installed into the launcher structure (see photo). Once fully vertical, the launch team posed for a group photo in front of the ILV. After four days of processing and testing on the launch pad, we

Posted 14 November 2007

[0 comments](#)

Posted By: ILS Sirius 4 Launch Team at 20:00 Baikonur

On the Launch Pad!

Following the successful completion of the operation readiness review, the Russian State Commission yesterday gave the go-ahead for roll-out operations. The operations started early this morning, and the fully assembled space launch vehicle (Proton Breeze M rocket with SIRIUS 4 spacecraft) has been erected vertically on the launch pad.

Over the next couple of days, the technical team will perform routine checks of the rocket, upper stage, and spacecraft. It will also perform guidance and control rocket systems checks on the launch pad.

The launch remains on schedule for Sunday morning (local Baikonur time).

Posted 14 November 2007

[0 comments](#)

Posted By: Khrunichev Communications Team at 10:00 Baikonur

Back to School



We were amazed by the warm hospitality from the faculty and students and by how extremely grateful they were for our donation. We shared some local food and drink with the principal and staff, and then took a tour of their library and computer lab. Unbelievably, the computers we donated back in 1998 were still fully functional and serving the students well. See the [photo gallery](#) for some scenes from our heart-warming visit.

Some personnel use the fueling up period as a time to rest or shop in town, while the ILS team decided it would be an ideal opportunity to accomplish another important task. Almost 10 years ago, ILS fostered a relationship with School #4 in Baikonur Town when we donated computers to the school. On this current occasion, we had many boxes of ILS jackets, backpacks, briefcases, and pens to offer the school. On short notice and with a tight window (often the case during a busy campaign), we visited School #4 with a bus-load of goodies.

Posted 13 November 2007

[0 comments](#)

Posted By: ILS Sirius 4 Launch Team at 20:00 Baikonur

Fueling Up

Following the assembly of the ILV, this massive structure had to be hoisted from the integration fixtures and placed onto the specially-made rail transporter. Seeing the huge ILV hovering overhead is definitely one of the most impressive parts of this whole process and makes one imagine the tethered balloons in a Macy's parade.

On the morning of 12 November, the ILV was ceremoniously rolled out of Hall 111 for a 2-day stay at the nearby Breeze M Fueling Station. (See the [photo gallery](#).)



Hardly a vacation spot, this is where the Breeze M low pressure tanks are filled. This is another one of those hazardous operations which required evacuation of the Processing Facilities (including offices).

Posted 12 November 2007

[0 comments](#)

Posted By: ILS Sirius 4 Launch Team at 20:00 Baikonur

AU and ILV Assembly



(PLF) halves, which will protect the satellite during its ascent through the atmosphere. The resulting structure, still attached to the tilter, is now known as the Ascent Unit (AU, [See Photo Gallery](#).)

You can also note that the logo decals, standard ILS decals plus customized SIRIUS decals, have been applied to the PLF. This inevitably leads to a logo signing ceremony. This popular event used to occur at the launch pad, but we have recently brought it back inside to Hall 101 for environmental reasons (i.e., it's very cold outside). In the [Photo Gallery](#) you can see some SES and ILS personnel just after making their mark on the decals.

In the next step, the AU is detached from the tilter and lifted onto a railcar for its climate-controlled journey to Hall 111. (See picture.) This involves a short trip outside, although the destination is actually the other side of the same processing building. Once comfortably inside Hall 111, the AU is hoisted from the railcar and placed in front of the three stages of the Proton. (See [Photo Gallery](#).)

It is then rolled back and carefully connected to the Proton, thereby forming the Integrated Launch Vehicle, or ILV. A couple of days here and this "SIRIUS" rocket hardware will be ready to roll out.

Posted 10 November 2007

[0 comments](#)

Posted By: ILS Sirius 4 Launch Team at 20:00 Baikonur

Media Advisory

The official [Media Advisory](#) has been released for the ILS Proton launch of Sirius 4. Check back for satellite broadcast coordinate updates.

Posted 9 November 2007

[0 comments](#)

Posted By: ILS Communications Team at 16:06 EST

Start of Joint Operations

Today brought us the much-anticipated start of joint operations for SIRIUS 4. As the title of this post implies, we have entered the action-packed phase when the satellite is joined to the launch vehicle hardware. It started early this morning when the fueled satellite was rolled from its processing hall into the main integration hall. The photo shows LMCSS personnel making final preparations on the satellite before it is lifted onto the payload adapter, which can be seen in the foreground. In the background, you can see the Wall of Fame with many posters and banners from previous Proton missions.

Next, the satellite is lifted by overhead crane onto the payload adapter for mating ([See Photo Gallery](#)). This is the same procedure used when the satellite first arrived, except that now the satellite weighs a whole lot more with its propellant tanks full. It takes a few hours to carefully complete the mechanical and electrical connections.

Finally, the combined satellite and payload adapter is hoisted onto the Breeze M upper stage, which is the off-white, cylindrical component mounted in the large, yellow tilt fixture ([See Photo Gallery](#)). It also takes a few hours to secure the connections between the Breeze M and the payload adapter. That's it for today's operations, but there is much more to follow.

We tend to think of the Baikonur Cosmodrome as a center of rocket technology, but every once in a while we are reminded of its softer side. Visit the [Photo Gallery](#) for a couple of examples.

Posted 5 November 2007

[0 comments](#)

Posted By: ILS Sirius 4 Launch Team at 20:00 Baikonur

All Tanked Up and No Place to Go (Yet)

Over the last three days, the expert LMCSS Propulsion Team has performed the spacecraft propellant loading operations. Since these are hazardous operations, the Processing Facility was restricted to "essential personnel" only. The rest of us "non-essential" personnel (no offense intended) were banished to the hotels for most of the day. The fuel loading occurred Tuesday as fuel was meticulously transferred from the propellant storage containers to the on-board spacecraft fuel tank. Wednesday, preparations were made for the oxidizer loading, and today the oxidizer was successfully transferred into the spacecraft oxidizer tanks. Throughout these hazardous operations, emergency personnel and an "escape bus" were in place in the event of an emergency.



Now that the tough part of propellant loading is over, it is time to do a little celebrating. In keeping with tradition, LMCSS is sponsoring a Post-Fueling Party Friday night in front of the Fili Hotel. I am quite sure we will all have a great time, but afterwards we will need to re-focus on the next major milestone, which is the start of Joint Operations (satellite meets rocket) on 5 November.

As we turn the calendar page from October to November, it should be noted that we have enjoyed very nice weather since we have been here, with the exception of Spacecraft Offload Day at the airfield (Murphy's Law applies in Kazakhstan, too). When you are treated to good weather, a game of golf can't be far behind. In the photo above, you can see a foursome of Lockheed golfers (complete with Lockheed-supplied golf cart) choosing to unwind on the front nine at Club Baikonur. Okay okay, so it is only a one-hole course, so far. A little imagination goes a long way.

Visit the [Photo Gallery](#) for more pictures.

Posted 1 November 2007

[0 comments](#)

Posted By: ILS Sirius 4 Launch Team at 20:00, Baikonur

Breeze M Upper Stage Arrives, Front-Row Seats for GLONASS Launch



We have just completed two more major milestones here in Baikonur. Late last night, the Breeze M upper stage arrived here from Moscow. We now have all of our major hardware components in place, which keeps us on track to make our 18 November launch date.

Today was a very special day as our full SIRIUS 4 team watched the launch of GLONASS on Proton from Launch Pad 24. Per safety

procedures, we were evacuated from the hotels and processing facilities to the VIP Viewing Area. There we enjoyed a long lunch and a great show. Under clear skies and a warm sun, we watched the on-time liftoff at 1:35 pm Baikonur time (see photo). which afforded us a rare daytime view including the discernible separation of the first stage.

Not only was it a spectacular sight, but it also represented the successful return-to-flight for Proton following last month's flight anomaly. This accomplishment was vital to the continuation of our SIRIUS 4 launch campaign.

We also took advantage of this captive team opportunity at the VIP Viewing Area to sign the SIRIUS 4 banner. The signed banner is proudly displayed in a team photo taken in front of the actual GLONASS launch vehicle (just kidding, that's actually a display model in front of the VIP Viewing Area). See the [Photo Gallery](#) for the picture.

What better way to cap off this momentous day than with a barbecue in front of the Fili Hotel. LMCSS sponsored the event, which featured delicious tri-tip beef from California. They have been having smaller barbecues almost nightly to practice for this full-team social activity, which came off without a hitch. We were fortunate to have a beautiful full moon rising over our barbecue ([Photo Gallery](#)) and this moon may well have brought good luck to the GLONASS launch.

Posted 26 October 2007

[0 comments](#)

Posted By: ILS Sirius 4 Launch Team at 20:00, Baikonur

Mission Overviews Available

Visit the [Sirius 4 Mission Overview](#) page for in-depth mission information or to download a PDF version of the overview.

Posted 26 October 2007

[0 comments](#)

Posted By: ILS Communications Team at 15:14 EDT

Breeze M Arrival

The Breeze M upper stage that will be used for the SIRIUS 4 launch arrived in Baikonur at 22:50 Thursday. It was delivered aboard a Russian cargo plane, a Ruslan AN 124-100 owned by a Russian carrier Polet – the principal carrier used by Khronichev Space Center to provide transportation for space launch purposes.

The upper stage was moved to Cosmodrome Pad 92 and mounted on a stand at Building 92A-50, where the Khronichev launch team will prepare it for launch in the coming days.

Posted 26 October 2007

[0 comments](#)

Posted By: Khronichev Communications Team at 13:32, Baikonur

Main Team and SC Arrival

Our ranks have grown in the last few days with the arrival of the Main Team on 18 October, bringing us up to 72 happy personnel. The Main Team's voyage here went well, although they were subjected to a 5:30 am bus pickup in Moscow due to tight scheduling with our charter company. On 19 October, we returned to the airfield to welcome the on-time arrival of the SIRIUS 4 satellite aboard a massive Antonov aircraft. Six large Sea-Land containers were also offloaded from the aft end of the Antonov. They contain various equipment and supplies needed for the campaign.



Unfortunately, the weather for the spacecraft offload was not as inviting as on previous days, with cloudy skies, a chilly breeze and occasional drizzle. However, we have all experienced much worse weather conditions for spacecraft arrival, so we really couldn't complain. The offload was completed expeditiously and the train left the airfield with its precious cargo, headed for the Processing Facilities. A few hours later, the slow-moving train arrived at the Processing Facility and the spacecraft container was offloaded from the railcar in Integration Hall 101.

Yesterday, the cargo containers were unpacked and the satellite was gently removed from its oversized container, where it was transported horizontally (see photo). After rotating into a vertical position, the satellite was lifted by an overhead crane onto the launch vehicle adapter (its physical interface with the Proton rocket) and a "fit-check" was performed. Following the successful fit-check, the satellite was rolled into Hall 103A where it will be the subject of standalone operations over the next several days.

Visit the [Photo Gallery](#) for more pictures.

Posted 21 October 2007

[0 comments](#)

Posted By: ILS SIRIUS 4 Launch Team at 19:30, Baikonur

Early Team Arrives in Baikonur!



Welcome to the SIRIUS 4 launch campaign! Today, the Early Team transitioned into Baikonur and when we say "transition," we mean it. Many of us came from the East Coast of the U.S., where we had been enduring record heat with temperatures well above 90 deg F. The Early Team assembled in Moscow and during the bus ride from our Moscow hotel to the airport this morning, we experienced a cold rain that quickly turned into a heavy, wet snowfall. Our charter flight managed to escape Moscow's first real snow of the season and, after a smooth 3-hour flight, we

arrived in Baikonur to clear, blue skies and temperatures around 70 deg F. It was perfect arrival weather, but those were some serious (not SIRIUS) thermal gradients we went through to get here. The photo shows the Early Team waiting (near the circular sign) to clear customs under beautiful skies in Baikonur.

It is now time to prepare the facility for arrival of the Main Team on 18 October followed by the SIRIUS 4 satellite on 19 October.

Visit the [Photo Gallery](#) for more pictures.

Posted 15 October 2007

[0 comments](#)

Posted By: ILS SIRIUS 4 Launch Team at 20:48, Baikonur