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MEASAT-3 Blog

Current Campaign Blog: MEASAT-3



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Fond Farewells

As you know, once the rocket lifted off, we had 9 hours, 12 minutes, and 10 seconds worth of suspense to see if everything went okay. Actually, since the first three stages are over after 20 minutes, the Proton rocket guys can breathe a sigh of relief and go home. The Breeze M guys then have the ball for the remainder of the flight. The mission for this injection was a standard 5-burn so we get intermediate checks on how things are going, but the feeling of lightness and relief when we hear that last report "SC has separated, everything nominal," cannot even be described.



Last night was the banquet. It is a crazy day, since we get very little sleep, but the traditional banquet is always the night of launch. So we do the best we can, taking one-hour naps in between burns. The banquet turned out very nicely. The MEASAT customer had left with the VIP group and so it was just Boeing, ILS, and Khrunichev. We have worked together so many times in the past that it was almost like a family dinner. Everyone had a good time and it was a nice way to end the program.

Today, the Boeing riggers went in to work at 4 a.m. to start loading the railcars for the transport of the equipment to the airfield. Tomorrow we will load the AN-124 with all the equipment and the empty SC container to fly back to sunny California. Then on Friday the 15th, we will board our final charter in Baikonur to go to Moscow.

While it was happening, it seemed like this campaign and mission was taking forever. Now that it is over, it seems like it happened in the blink of an eye. We still have a lot of stuff to do today: pack the offices, turn over facilities and to say good-bye to our friends and colleagues at Baikonur. We'll miss them when we get home. We'll also have the strange phenomena of feeling as though we have lost something everywhere we go for the next two weeks. It's because we will turn our radios in, and they have been our constant companions for these last five weeks, on our belts or by our heads while we sleep.

Finally, we won't really, really relax, until we are on our flight home, and responsible only for ourselves.

That's it from Baikonur.

Posted 13 December

[1 comments](#)

Posted By: ILS MEASAT-3 Team at 17:24, Baikonur

Until We Meet Again...

As another successful launch campaign draws to a close, so does the year. Our teammates and colleagues are wrapping things up and returning home just in time for the holidays and a new year. We're thankful for their hard work and wish everyone safe travel on their way home.

We're also thankful for those of you who have joined us here -- customers, space fans, co-workers, families -- you all are the reason we write. We appreciate your interest, your feedback and your support.

The actual blog and blog photo album will remain on-line until 2 January. After that time, you can find the blog in PDF format in the [launch archives](#), along with links to other MEASAT-3 launch collateral.

Have a happy holiday season and a wonderful new year!

Posted 13 December

[0 comments](#)

Posted By: ILS Communications Team at 13:36, EST

MEASAT-3 Mission Complete

Congratulations to all the teams on a successful launch mission for Proton and MEASAT-3. We have confirmed a successful final burn and shutdown, and subsequent separation of the spacecraft, which reached its geosynchronous transfer orbit.

Read the [full press release](#) and visit the [Photo Gallery](#) for more pictures.

Posted 12 December

[6 comments](#)

Posted By: ILS Communications Team at 04:00, EST

Successful Liftoff



Successful liftoff of the Proton carrying MEASAT-3 has occurred. Highlights of the launch may be viewed at [MEASAT-3 Launch Highlights](#), or you can watch the entire broadcast at [MEASAT-3 Launch Broadcast](#).

At this time, we have confirmed the first stage Breeze M ignition, and subsequent shutdown. For the latest updates, call the launch hotline at 1-800-852-4980.

Photo: Liftoff of the MEASAT-3 on Proton at Launch Pad 39, Baikonur. Visit the [Photo Gallery](#) for more pictures.

Posted 11 December

[6 comments](#)

Posted By: ILS Communications Team at 18:59, EST

Last Minute

We are in the bunker after a whirlwind day of receiving VIPs and working last-minute tasks. This night will be long, as we will not sleep at all until we see that fiery light in the sky, and know that the first three stages of the rocket have worked. Then we will take a nap while our colleagues stay up and keep track of the Breeze M burns. The full mission takes 9 hours, 12 minutes, and 10 seconds, so while our friends who work at the launch pad can celebrate as soon as it is clear of the pad and downrange, we have to wait another full workday to confirm that our part has been successful.



Right now, final preps for loading the rocket are in work, and the pad and surrounding areas have been cleared of personnel. The SC has undergone its final battery charge and the State Commission has met one final time to approve proceeding with the LV fueling and with launch. It is a cold, clear night, and we think it will be a beautiful launch to see.

It was fun to see the VIPs, especially the two girls who won the contest for a trip to come here. We felt like Willie Wonka showing them the Chocolate Factory. The girls, ages 10 and 17, won a contest sponsored by MEASAT and ASTRO by submitting a drawing of the MEASAT-3 satellite and a 100-word essay. You can see their winning drawings in the [Event Photo Gallery](#) on display at the Kuala Lumpur launch event. They were chosen as the winners from more than 350 participants to visit the Cosmodrome and witness the launch. Can you imagine winning such a prize?

Photo: Launch vehicle on launch pad, shortly after verticalization operations. Visit the [Photo Gallery](#) for more pictures.

Posted 11 December

[4 comments](#)

Posted By: ILS MEASAT-3 Team at 10:33, EST

'Twas the Night Before Launching



It is a winter wonderland here. The trees are still covered with a beautiful coating of frost that sparkles when the sun comes out.

We did the on-pad interviews today. The customer did his like a pro. He was quite good. We were impressed with his eloquence.

Today is a quiet day. There are some preparations going on, but for the most part, today is a contingency day. Early this morning, starting at 2 a. m., the SC performed a battery charge operation. It is Sunday, and we should be resting, but of course

there is the last minute flurry of faxes and official correspondence. So, no day of rest for us.

Monday we expect the VIPs to arrive. We don't know for sure, but this might be the biggest VIP group we have ever hosted here at the Baikonur Cosmodrome. The planning that has gone into this operation is almost as intensive as the planning for the launch itself.

Tomorrow is the big day! The satisfying conclusion to all our hard work just in time to return home for the holidays with our family and loved ones.

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

Posted 10 December

[0 comments](#)

Posted By: ILS MEASAT-3 Team at 17:24, Baikonur

Dress Rehearsal

Today we are running the combined launch countdown rehearsal. Also we have an unusual combination of humidity and temperature which has resulted in an absolutely lovely frost on all the trees. They look like they have all been imported straight from fairyland.

Here you can see our program director (right) and one of our customer team members (left) in the bunker, manning the abort button for the countdown rehearsal.



The LV went through its testing last night successfully so we are in good shape going forward. The SC has charged its batteries and checked the RF command and telemetry links once more to assure they can talk to the SC. Tomorrow we will film the live broadcast videos on the launch pad.

Photo: Rehearsal in the launch pad bunker. Visit the [Photo Gallery](#) for more pictures.

Posted 9 December

[0 comments](#)

Posted By: ILS MEASAT-3 Team at 12:14, Baikonur

Launch Pad Lineup



The launch vehicle is on the pad and fully vertical! We all went out to watch the verticalization operations today. One of our Russian colleagues asked rhetorically, "How many times have you all watched this?" Who knows? It is always a thrill to witness.

The customer, MEASAT, and their consultants were very happy to be out there right at the launch mount. Although temperatures here are much different from their warm Malaysian climate, they did not seem the least bit daunted.

The Boeing team and the ILS team had their photos taken. And in the end, we all came together for one big MEASAT-3 team photo.

We are now through all of the SC activities of Day 1 on the launch pad. We can breathe a little now, as the SC has been successfully powered up and checked and the radio frequency (RF) link to the control room checked out perfectly before the service tower was rolled forward.

Tonight, the LV team will do their crucial testing. The rest of us are going to bed in preparation for another early start tomorrow!

Photo: Launch vehicle arriving at the launch pad and preparing to go vertical. Visit the [Photo Gallery](#) for more pictures.

Posted 08 December

[2 comments](#)

Posted By: ILS MEASAT-3 Team at 20:32, Baikonur

Roll Out

We just got back from watching the Proton rocket roll out to begin its journey to the launch pad. The Proton rolls out precisely at 6:30 for every launch. All the important people who flew in for the State Commission Meeting last night are also there to watch this awesome beast roll by. It is quiet, almost reverent, and in the pitch black, it is hard to distinguish friends from strangers. A winter launch is so different from a summer launch, when it is light, warm, and almost a celebratory feel. Today it was like going to church, or watching the solemn roll-out of a submarine. Standing next to the rail as the Proton goes by, you cannot help but be impressed and awed by its sheer bulk and sleek lines. This rocket is a workhorse, but like a Clydesdale, it looks perfectly built for its task.



Later, we will tell you about vehicle verticalization. We are back at the hotel for breakfast and a rest while the rocket wends its ponderous way to the pad.

Photo: The launch vehicle, en route to the fueling station earlier this week. Check back for pictures of this morning's rollout. Visit the [Photo Gallery](#) for more pictures.

Posted 8 December

[1 comments](#)

Posted By: ILS MEASAT-3 Team at 08:16

Final Checklist



It's exciting to be getting closer to launch day but right now things are a whirlwind. We have just enough time after a day full of meetings and before catching the final call for dinner to send a quick update on how things are going.

We just finished up our State Commission meeting this evening. It's a chance for every group involved with the launch -- ILS, Boeing, Khruichev, MEASAT, government regulators, et cetera -- to report on the status of their respective responsibilities and give a final "thumbs up" for the launch to proceed. Everything is good to go so that's a major milestone to check off.

The launch vehicle is at the Breeze M fueling station and is now fully loaded with oxidizer and hydrazine. Tomorrow we will roll it out to the launch pad to begin the erection and final preparations for the launch early next week. We are on schedule and working no issues.

In between meetings and events we're trying to keep up with the pending Discovery launch at Cape Canaveral. If they have continued delays due to the weather, we may end up launching before them.

It's getting late and time to head off to a staff birthday celebration before we turn in for the night. Be sure to check out the blog album for some great new photos from this week!

Photo: Earlier this week -- the ascent unit in Hall 111, being prepared for a mate with the launch vehicle. Visit the [Photo Gallery](#) for more pictures.

Posted 7 December

[0 comments](#)

Posted By: ILS MEASAT-3 Team at 20:30, Baikonur

One Week to Go...

It has been an incredibly busy four days. After the SC was mated to the Breeze M, it was brought to a horizontal position (as you saw from the last entry) and we said our final goodbyes to it. Then, the two halves of the payload fairing were brought around the SC and it was sealed. After the encapsulation, we all signed the fairing and then had a team photo with our MEASAT customer.



Since then, the encapsulated SC (called the ascent unit or AU) was tested and closed out. It was moved over to Hall 111 to mate with the launch vehicle, which completed successfully to form the integrated launch vehicle (ILV). Tomorrow, they will be lifting the ILV to the transporter.



Gotta dash -- we are trying to make the 6 p.m. bus tonight!

Photo: Top -- ILS team member having a moment with the mated spacecraft. Bottom -- MEASAT-3 team photo in front of the encapsulated SC. Visit the [Photo Gallery](#) for more pictures.

Posted 04 December

[1 comments](#)

Posted By: ILS MEASAT-3 Team at 17:50, Baikonur

Zen and the Art of Rocket Launches



In the midst of a busy launch campaign, it's always good to stop every once in a while for some relaxation and balance. Luckily, we have our very own Bikram Yoga master on the team who leads classes when we can all find time.

Here, he is striking a pose called "The Arrow". We think he must have been inspired by the amazing sight of watching the operation of leveling the entire SC from the vertical mate position. In the background, you can see the now horizontal Breeze M and satellite. The next step is encapsulation -- when the payload fairings will be put around the satellite.

Photo: The launch team's resident yoga master enjoying a moment of Zen. Visit the [Photo Gallery](#) for more pictures.

Posted 1 December

[0 comments](#)

Posted By: ILS MEASAT-3 Team at 19:30, Baikonur

Logistical Dance

We have had some very long days in order to move the SC to our high bay area and meet up with the Breeze M upper stage.

The MEASAT SC has six antennas and is very large. As you can see here, it is a delicate operation to move and lift the SC to mate with the launch vehicle (LV) adapter. Everyone has a role to play in this critical operation, from the Boeing SC mechanical team who moves and lifts the SC, to the Saab team who prepares the clamp band, to the KhSC team who waits to receive and coordinate the adapter attachment. When things are going well, it is a pleasure to watch this stately dance.



On Tuesday, the SC was rolled into the high-bay to stage it for Wednesday's long day. Every hour was planned out, forward and backward, like a giant puzzle. The SC could not be moved any sooner because the Breeze M was at the high-pressure fueling station Sunday and Monday, getting its helium and control tanks filled. It was moved back to 92A-50 in the wee small hours of Tuesday. The big doors leading to the outside had to be opened to move the Breeze M in the building, so the SC could not be moved into the same high bay until after the Breeze M came in.



At 6 a.m. bright and early Wednesday, crews reported in to mate the SC to the adapter. The plan was to do the mate, perform electrical checks, lift the SC and adapter, mate it to Breeze M, and follow up with electrical checks again, all in one very long day and night. We actually extended the operation into Thursday, and successfully lifted and mated the SC to the Breeze M. Then the test team came in, and we are on track.

We are all pretty tired now, and we aren't done yet.

Photo: Top -- SC moving in to the high bay. Bottom -- Lifting the SC for mate to the Breeze M. Visit the [Photo Gallery](#) for more pictures.

Posted 30 November

[1 comments](#)

Posted By: ILS MEASAT-3 Team at 19:03, Baikonur

Fully Loaded

Friday was a set-up day, and Saturday the propulsion team loaded the SC with fuel. Now the SC is fully loaded and will be able to fly itself to its final destination, after we boost it to its separation point.

Saturday started at 7 a.m. and ended after 10 at night. For most of us, it was a day off, as we were once again cleared from the facility due to the hazardous operations, but for a few of the ILS team it was a very long day. Today, those folks had the whole day off, and the rest of us went in and supported the SC closeouts. We also used the opportunity on Saturday to review our combined operation schedules and make final synchronization adjustments.

It is getting really cold here now, and a lot of the team has come down with sniffles and sneezes. Hope we can stay relatively healthy through launch!

Posted 26 November

[0 comments](#)

Posted By: ILS MEASAT-3 Team at 16:35, Baikonur

Happy Thanksgiving

Yesterday was a milestone day for us on the launch campaign, and also for every American. From a launch perspective, we loaded the SC oxidizer tanks. Now the SC is half-ready to fly itself. From an American perspective, it was Thanksgiving Day. Of course, our international colleagues do not celebrate Thanksgiving, but we take pleasure in teaching them about a uniquely American holiday: one devoted just to being thankful for what you have.



Last night we gathered together, each walking through the crisp air under the thin new moon to our Proton Club conference facilities. It was the only place large enough to hold all 80 of us: MEASAT, ILS, Boeing, Weissker, Pinkerton, DTSA, SOS, and KhSC. The catering staff worked wonders, under the careful direction of certain key members of the ILS team.

The turkeys had been requested well before the start of the campaign, and this night's celebration was planned with the care of a rocket launch. A CAD model of the turkey carving was considered, but in the end, only a sketch was produced. The menu featured roasted turkey, very tasty stuffing (made from an old family recipe), mashed potatoes, gravy, green beans, carrots and bread. There was a nice preamble where people could mingle, get drinks, and snack on chips, nuts, and olives. Then, the salads (green, carrot, beet, and potato) were introduced. By the time the main course arrived, several people wanted to carve the decorative turkeys.



Although there was one abortive attempt to usurp the proper flow, the real carver soon stepped in and dispatched the first fowl. Finally, a truce was reached. Thank goodness there were only two "show" turkeys! The staff had the serving pans all ready to whisk in once the amateurs were finished. In all, 15 turkeys were roasted (and carved perfectly to specifications!) and three roast filets of beef. The sweet ending to the meal was a caramel apple pie courtesy of a recipe downloaded from FoodTV.com. Everyone loved it, and it was a fine

finish to the meal. There were several toasts to the fueling team, who had accomplished the major milestone with no incident.

Afterwards, people continued to chat in small groups, as well as play ping-pong and pool in the upstairs area.



All in all, we were all thankful to have such a feast in such a remote place. While thinking of our own families, we came together last night as one family, and although it was around zero degrees Fahrenheit (-17 degrees Celsius) outside, it was warm and toasty inside.

Photos, Top to Bottom: Waitstaff; A Difference in Carving Styles; Good Conversation. Visit the

[Photo Gallery](#) for more pictures.

Posted 24 November

[0 comments](#)

Posted By: ILS MEASAT-3 Team at 13:53, Baikonur

Crunch!



It snowed quite a bit yesterday, but today it's too cold to even do that. It was three to 14 degrees Fahrenheit (-16 to -10 degrees Celsius) overnight last night and this morning, when we walked on the frozen snow, it went "CRUNCH! CRUNCH! CRUNCH!" During the day it gets warmer when the sun comes up, but that doesn't happen until 9, and it goes down around 6. So, not a lot of hours in the day right now.

We have some great photos of the landscape after the snow yesterday. Also yesterday, our

SC team took some time to get a team photo in front of the Proton model by the Proton conference facility. As you can see, although the temperatures have dropped quite a bit, spirits are still high.

We are still on schedule. Tomorrow we will be loading the SC with one of its propellant components, so most of us will be cleared from the facility for the hazardous operation. As it is Thanksgiving tomorrow, we have a big turkey dinner planned at the Proton Club, and will invite some of our Russian colleagues. The preparations for the menu are almost as complicated as the one for the launch, involving very intricate three-dimensional sketches of turkeys and cuts for carving, as well as detailed recipes with cups and teaspoons converted to grams and milliliters. Oh well -- what is important is that we will have another get-together, and have the opportunity to be thankful for all that we have.

Photo: SC team at Proton conference center. Visit the [Photo Gallery](#) for more pictures.

Posted 22 November

[0 comments](#)

Posted By: ILS MEASAT-3 Team at 18:15, Baikonur

Let It Snow

The barbecue last night went very well, although it did start snowing and the barbecue chef was a little chilly. We invited the VIP Site Survey group to join us. The photo here shows the MEASAT site survey lead in front of the MEASAT-3 rocket.

Today we continue preps for fueling and SC standalone testing. It snowed on and off all day and it is definitely getting white outside.

Photo: Site survey lead in front of the Proton. Visit the [Photo Gallery](#) for more pictures.



Posted 20 November

[1 comments](#)

Posted By: ILS MEASAT-3 Team at 17:41, Baikonur

Weekend Activities



We are continuing propulsion system testing today, but for most of the Boeing team, and many of the ILS team, it was a day -- or at least a partial day -- off. Yesterday, many folks went to town for a chance to buy stuffed camels in the market and enjoy shish kebab and beer at the outside cafes. Last night, some went out and had fun dancing at the nightclubs in town.

Tonight, we are hosting a burger barbecue at the Kometa hotel. We hope the weather will hold. It was raining quite heavily yesterday and only an hour ago, light flakes of snow were coming down. Snow

is better than rain -- you can still barbecue in snow!

Photo: A beautiful Baikonur sunset from earlier last week. Visit the [Photo Gallery](#) for more pictures.

Posted 19 November

[0 comments](#)

Posted By: ILS MEASAT-3 Team at 15:25, Baikonur

Launch Mascots

We are thrilled to announce that we have a mascot for this campaign! Our Boeing launch campaign manager does not look very much like our mascot, Shrek, but if you close your eyes when he talks, they sound identical. Apparently, Shrek also has a mascot, the Devil Duck. Devil Duck guards the container of Twizzlers and he takes his job very seriously. Not sure sometimes if he is guarding, or if he is tempting. As you can see from Shrek's look, he is also not sure.



Last night we celebrated the birthdays of two team members, separately, and then jointly. The Boeing team had one, and the Pinkerton team had the other. The parties started in each respective hotel but eventually they merged into one grand celebration.

The SC testing is going well and we have settled into a good routine. The weather remains nice and mild for this time of year and we are planning another barbecue on Sunday. This time it will be American-style burgers. Today we will be welcoming the Boeing propulsion team to Baikonur. We're looking forward to seeing them again.

Photo: Mascot Shrek and his trusty sidekick (and guardian of Twizzlers) Devil Duck. Visit the [Photo Gallery](#) for more pictures.

Posted 17 November

[0 comments](#)

Posted By: ILS MEASAT-3 Team at 10:24, Baikonur

SC Prep



Late yesterday, the SC crew got the MEASAT-3 satellite moved to our processing facility and into the clean area. After the containers were off-loaded and the Class 100,000 clean environment was re-established, we opened the SC container, verticalized the SC and moved it to the SC dolly. Then the team moved the upright SC into Hall 103A, lifted it and secured it to the fuel stand that had already been installed and waiting.

Photo: SC team leads with the verticalized SC. Visit the [Photo Gallery](#) for more pictures.

Posted 16 November
0 comments

Posted By: ILS MEASAT-3 Team at 23:25, Baikonur

MEASAT-3 Mission Overview

The MEASAT-3 Mission Overview is now available online and in PDF format. [Click here](#) to view mission details and graphics.

Posted 16 November
0 comments

Posted By: ILS Communications Team at 16:19, EST



Shipping & Receiving



Yesterday, we had a beautiful day for the arrival of the spacecraft (SC) on the Antonov aircraft (AN-124). It was clear blue skies and not too cold. The AN-124 arrived on-time at 10 a.m. The operations on the tarmac went very smoothly and we ended up sending the fully-loaded railcar on its six hour trip to the processing facility by 16:15. In the meantime, trucks had been dispatched to bring critical fuel-stand plates and the Boeing fuel stand to Building 92A-50 for installation by the team there. The personnel goods container was delivered to the hotel.

Night operations also went well, and the SC container and other support equipment were off-loaded into the processing hall by 2:30 this morning.

It has been a long time since we have had a Boeing SC out here. It's exciting for us to be working with Boeing again, and to show them the improvements we have made in the 6 years since they were last here. There are many old friends and colleagues here, who remember the early days with us. Our very first ILS Proton launch was with Boeing (it was Hughes back then), and we are particularly happy to see them again, and proud to show them how far we have come in those years between.



Photo: Top & Bottom -- Unloading equipment from the AN-124. Visit the [Photo Gallery](#) for more pictures.

Posted 15 November

[1 comments](#)

Posted By: ILS MEASAT-3 Team at 18:09, Baikonur

Hit the Ground Running

The MEASAT early team arrived at Baikonur Nov. 10. It was snowing big, heavy, clumps of snow from a pitch dark sky in Moscow when we took off. We had to leave the hotel at 4:30 in order to get to the airport for our 6:30 planned take-off. The reason we had to do this is that the BADR-4 team was to use the same charter to depart Baikonur and they wanted an early departure. We had to wake up at what is known as "oh-dark- thirty." Nonetheless, the team was chipper and looking forward to starting our launch campaign.



On the plane, some of us did our best to work, despite the early start. And some tried to get rest. We were amazed by some of the team who looked particularly fresh, considering their long travel from California.

Upon our arrival at Baikonur, we were able to briefly greet our colleagues from BADR-4 and receive their best wishes for a smooth launch campaign. We, in turn, gave them our congratulations for their successful launch.

The main team from the satellite manufacturer, Boeing, arrived Nov. 12, with some of our support staff. We were very happy to see them, as we now have a full crew. We planned a welcome barbecue for them but they arrived three hours later than anticipated due to a late departure from Moscow. So it was a little dark, but we had a great time, and I think the newcomers felt duly welcomed.

Today, we are doing our final plans for receipt of the spacecraft and support equipment tomorrow. It will be a light work day, as tomorrow and the next day will be long. We will work pretty much around the clock to receive the SC and equipment, transport it to our facilities via rail, off-load and unpack everything, and get the SC to its test area.

Photo: Dedicated members of the ILS team -- working even during travel time! Visit the [Photo Gallery](#) for more pictures.

Posted 13 November

[3 comments](#)

Posted By: ILS MEASAT-3 Team at 10:20, Baikonur

Welcome to the MEASAT-3 Blog!

We're happy to be hosting our third campaign blog this year! Back to take us through the wonderful world of rocket launching is the MEASAT-3 team, responsible for our inaugural blog and the successful return to flight with HOT BIRD 8.

Thanks for joining us. Be sure to check out the photo album, leave comments for the team and visit regularly for the latest updates and information.

Posted 12 November

[3 comments](#)

Posted By: ILS Communications Team at 16:37, EST