



# NEWSLETTER-AMSAT-EA

04/2019  
APRIL

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## AMSAT

### ESEO

ESEO has completed the LEOPS (Launch and Early OperationS) phase, reaching the platform nominal mode and has begun the process of commissioning the satellite: first the platform functions, and later the payloads functions.

As part of this commissioning process, but subject to the successful completion of other preparatory tasks of the platform subsystems commissioning, they inform that initial testing of the AMSAT communications payload will be carried out in a few weeks.

Also available is a high speed, 4800 bps BPSK data format downlink and a Mode L/V FM transponder.



### LILACSAT-1 (LO-90) Re-enter

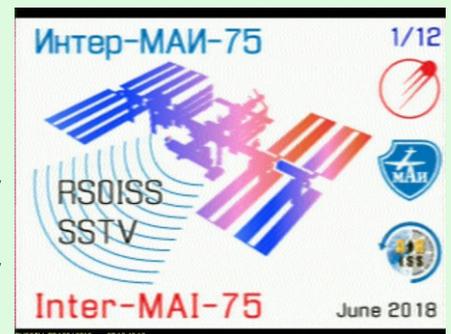
It's expected that the ham radio satellite LilacSat-1 (LO-90) re enters earth's atmosphere at the end of march.

BG2BHC informs that in the last few days, there was some sort of contest to receive its telemetry and contacts thru the satellite. More information @ <https://twitter.com/bg2bhc>  
Update: LilacSat-1 re-entered on march 28-29 near the coast of south Chile.  
<https://twitter.com/bg2bhc>

### MORE SSTV FROM THE ISS: April 1-2

Inter-MAI-75 an experiment aimed at combining the efforts of educational universities and radio amateurs in Russia and the United States to develop technology and technical tools that enable students to communicate and collaborate with astronauts in the study and development of the management process of the ISS, as well as to work out various methods of transmission and various types of transmitted information (text, voice and telemetry information, black and white + color photos and video from blasts, etc.), obtained as a result of scientific and educational experiments through the use of amateur radio communications onboard the ISS.

The SSTV images will be on 145.800 using the Kenwood Tm D710. Mode as usual: PD-120



## Coming activations



KOFFY

**EA4NF**, Philippe. This time is heading to HB0 / Lichtenstein. Philippe Will use this call: HB0 / EA4NF from Leichtenstein and HB9 / EA4NF from HB. (JN47, on FM sats and SSB. QSL via LoTW. Updated info and pass announcements (time and frequencies) in twitter : [https://twitter.com/EA4NF\\_SAT](https://twitter.com/EA4NF_SAT).

**N7AGF**, Alex will be in his rover activating some weird grids. Look for him between april 29 and may 4 or 5 (ore ven more, if conditions are ok). Alex wil fly to Minneapolis and to CN88, activating as much grids as he can: ENx8, ENx7, DNx8 and DNx7

**AL6D**, Gabe was again in Europe. First from Poland February 24-28. Lithuania from febr. 28 to march 4. Kaliningrad march 4-7, St Petersburg march 7-11, Aland Islands march 11-13 and Helsinki march 13-14

**VP5 / AA5UK**, Adrian, was active from february 28 to march 9 from Turks and Caicos

**VY0ERC**, Eureka ARC, was QRV from Eureka, NU (NA-008), february 3 to march 29.

**F4DXV**, Jerome was active from JN06, JN07.

**KOFFY**, Adam, from Florida Keys , march 18-21, Activating EI94.

Several mexican operators were active from march 21-24 celebrating the Spring mayan equinox

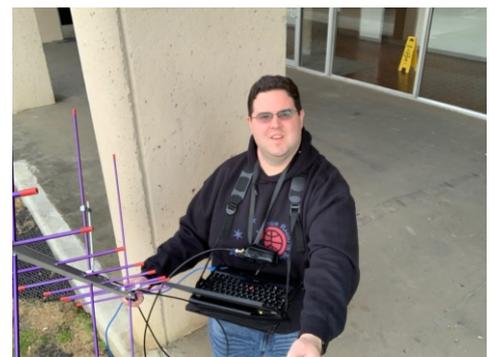
- 4A3MAYA - Museo de Antropología Regional, Tabasco
- 4B3MAYA - Mérida, Yucatán
- 4C3MAYA - Champotón, Campeche
- 6E3MAYA - Quintana Roo
- 6F3MAYA in satellites

**K4NHW**, Nathan was active march 26-31 from Curacao Fk52. AD0DX, Ron march 28 activated 4 grids: EN93, EN94, FN03, FN04

## ACTIVATIONS NOW OVER



OZ/AL6D



N8HM



3A/EA4NF from Monaco



F4DXV/P from JN07

# OSCAR 100 - QO100 - ES'HAILSAT 2

This is a small recopilation of some QO100 set ups seen on the internet.



2E0OKF



IK8XLD, 2 X 120cm



EA4GPZ. The antenna is a 24dBi WiFi dish. Box housing a black Beaglebone, LimeSDR mini, Controller is a GALI 84 and power supply. TX power is almost 100mW



F4DXV



G4KVT



Antennas designed by EA5DOM



DC7KOW/P station.



DL6NCI, 90cm dish with dual-bandfeed DJ7GP, TX. MKU23G4 (GPS controlled LO) + Stealth SM2527-47L PA



EA4SG





EB5AQ



PS8RF

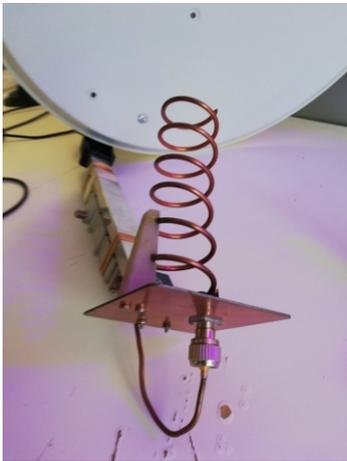


2.4 - 10 GHz dual band 29 - 16° MJW feed test contraption (with wobbly DRO LNB) RX-ing the 11205 MHz Es'hail-2 beacon. Jan 2019 PA3FYM

PA3FYM



@Croatia\_uw



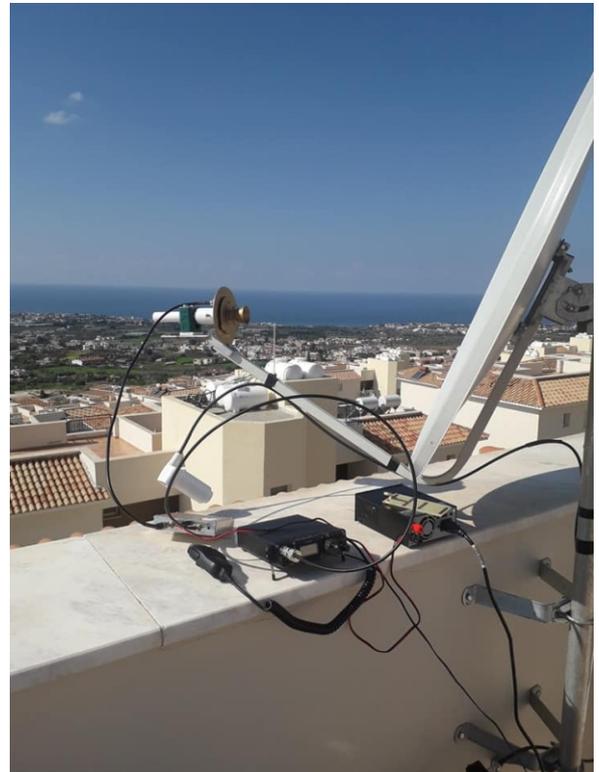
F4EED



BG0AUB



PA1SDB



Paphos Radio Club #5B4PRC

# SITUATION AWARENESS

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Por Pedro, CU2ZG

This is a hot topic. First, I would like to state that this is my opinion, based on cordiality, common sense and what I feel is right. I have adopted these guidelines myself as consideration for others and for my own benefit. If you would like to practice the same then feel free to do so. My belief is that the community, common sense, AMSAT and Authority should work together for the better. If someone feels what I am about to write is disrupting someone else's operation then let me know immediately. If you feel that it is not interfering but is not the best practice, be reminded this is my opinion, and then I would still like to know yours.



Situation awareness starts long before you get into the radio. Way before you figure out whom you want to work. It starts for me at, what I like to call, the satellite-monitoring task. This is when you start to listen the beacon and the passband/channel. Study it, see if you can find the average spin rate, how fast it fades, how easy others get into it. Try a couple of passes to get it right.

Then move to the orbit. See how it changes every day. Is it passing later each day, is it passing earlier, does the footprint moves East or West on each pass in case of a SSO? Where does the typical footprint hit? How the Apogee and Perigee change along the year? What is the order of that footprint move, who gets it first and last?

Signup for AMSAT-bb, Facebook pages, WhatsApp groups, Twitter. Many of those there not only can help you but also announce their activations. Create reminders for those special or rare activations, your friends, anyone you would like to complete a QSO with. Then the core of the situation awareness is, for me, the pass itself. What areas will be on the footprint, sequence, is the satellite in eclipse or illuminated?

Look for mobile or portable stations, which could mean they are using a simple setup that would like to see if it works, or that they are in a different and new grid. Look for new callsigns, new entities.

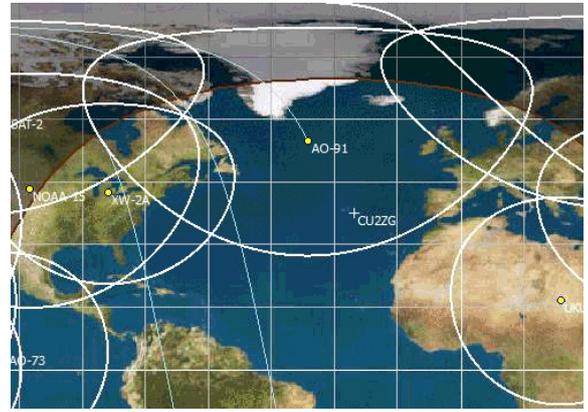
If you are aware of what is going on will increase your and everyone else's chances, and most important achieve an orderly pass.

## ***Let me give you two examples.***

A satellite, AO-91, in its Sun Synchronous Orbit, is approaching from the south on its way to the north. It will cover most of the Atlantic, Some of Africa, Cape Verde, Canaries, Madeira, Azores then will start to hit Europe and North America. Remember, it' coming from the south, so northern countries are expected to be heard later in the pass. As it comes over the horizon I look for it, beacon or anyone talking so I can assess it is where I expect it to be. If no one is on, I will announce myself and wait for a reply. During most of the first part (up to the TCA) there was only me and a station in the Canaries. Now, the crowd starts to get in. Portugal, Spain, France, Central Europe, UK, Ireland, North America and Northern Europe are expected to show up in that order. No one is in Portugal, I get EB1AO from Spain, and I know F4DXV is in France

listening, but he does not announce himself. As UK and Ireland come in, I get M0NPT and MI6GTY.

Now the satellite is getting closer and closer to the horizon and I figure I have some 3 minutes left, when someone new in Germany shows up. It is not a rare grid but it is someone new. EB1AO calls him. I have 1 minute left. Here comes the situation awareness – M0NPT and MI6GTY have at least some good 3 minutes left in the pass and F4DXV around 2, so they “give way” for me. I get that station, followed by them. Of course, this is the ideal pass, and almost every time this will not happen. No one was in North America, which was a shame, as we in Europe are eager to get contacts across the pond.



Picture 1: AO-91 on a northbound pass

My second example is AO-85 due from the Southwest into Northeast. I will get the Caribbean and South America first, and then Europe will come in starting with Portugal and Spain. I know from Twitter that FG8OJ and EB1AO will use this pass to try a new QRB record in this satellite with only a few mutual seconds. That will happen around my TCA. Obviously, when it came over the horizon Spain was not in range, I have a quick QSO with FG8OJ. Then, I stay put. They have that QSO, and a few seconds later FG8OJ is out of the footprint, so I can get in sure that I will not interfere. A quick call to EB1AO and congratulate him on the new record. The rest of Europe starts to get in.



Picture 2: AO-85 on a very small window pass for Caribbean and Spain

These two examples are special. It was either a new station or an announced scheduled contact. However, could be two stations you heard before and you are completely unaware that they have never completed a QSO before nor have each other's grids. However, if your situation awareness is kicking in you will understand that if a station is deliberately calling someone else that has not been heard before in that pass it means a contact is being looked for. If you are aware of the geography, you can figure out how much time in the pass each one has. Can you log some QSOs in the meanwhile? Should you wait for that QSO to be completed? The answer is yes to both question, but your common sense and situation awareness will dictate what the best practice should be.

Seen before scheduled contacts with 1 minute window fail because someone felt like CQing or complete a QSO with one of the stations, instead of giving way. I have had people telling me half way through a 45 seconds mutual window while I was still looking for the other station, they were sorry, and stepped in. Whom I am looking for comes in and I have 15 seconds to go, but it is busy with that someone, who still has 6 more mutual minutes.

FM satellites are single channel, just like a repeater. There is no “is this frequency in use?” but common sense and situation awareness is important. Even on linear satellites, you must exercise discretion. Just like on a repeater or HF bands. Remember, no one owns the spectrum, and a satellite as a moving target gives you a limited time each pass. Avoid stepping on someone else shoes. It comes to all, and there is always a next pass - for those looking for others, as well for those less aware. Most important is to have fun.