

Balloon Launching with Ham Radio

Walter Holmes walterh@k5wh.net

K5WH

January 2024



South Texas Balloon Launch Team

To the Edge of Space!

Areas to Cover

- **History of South Texas Balloon Launch Team**
- **Large Balloons (poppers)**
- **Small Balloons (floaters)**
- **Current & Future Ideas on trackers**
- **Launch Sites**
- **Tracking sites**
- **Contacts for Details**

History of South Texas Balloon Launch Team

- Inspired by Bill Brown-WB8ELK
 - and Andy MacAllister W5ACM (sk)
- A loosely disorganized group of fun loving hams
 - Monthly dinner and Zoom meetings
- Launching balloons for nearly 30 years
- Launch 1 HAB High Altitude Popper Balloon per year
- Launch at least 2 floaters per month
 - Trying to keep at least 1 balloon in the air at all times



Flight Rules FAA-101 Exemption

- **Payload is less than four pounds**
- **Or, Payload is less than six pounds and the smallest surface is more than 36 inches (6 inches by 6 inches)**
- **If you have two payloads, they weigh less than 12 pounds together**
- **If you have a rope, it takes less than 50 pounds of force to break it off**

Large Balloons (poppers)

- **Typical HAB Payloads**

- **APRS**
 - **VHF/UHF crossband analog repeater**
 - **DMR UHF Single Frequency Repeater (sfr)**
 - **DVB-T High-definition live ATV color video**
-
- **Highest altitude almost 120,000 feet**



Large Balloons (dream)



Large Balloons (envious)



Large Balloons (preparation)



Large Balloons (poppers)



South Texas
Balloon Launch Team
BLT-49

September 30, 2017

To the Edge of Space!

Large Balloons (poppers)



South Texas
Balloon Launch Team
BLT-50

August 25, 2018

To the Edge of Space!

Small Trackers (floaters)

- **Typical Floater Payloads**
 - CW beacon
 - APRS
 - WSPR
 - APRS & WSPR
 - Camera, with images sent over APRS
- **Several times around the world**

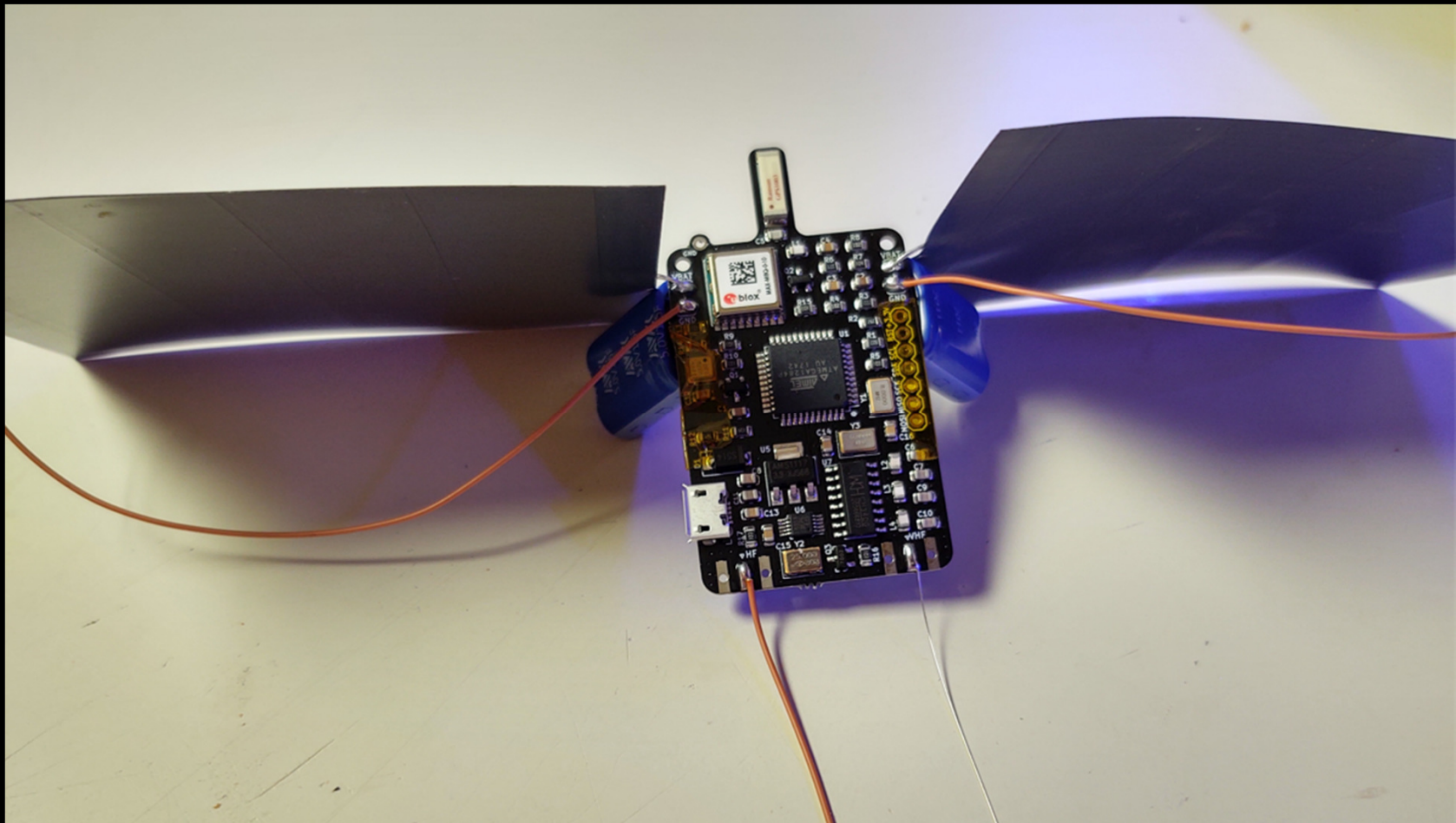
Flight Crew Pics



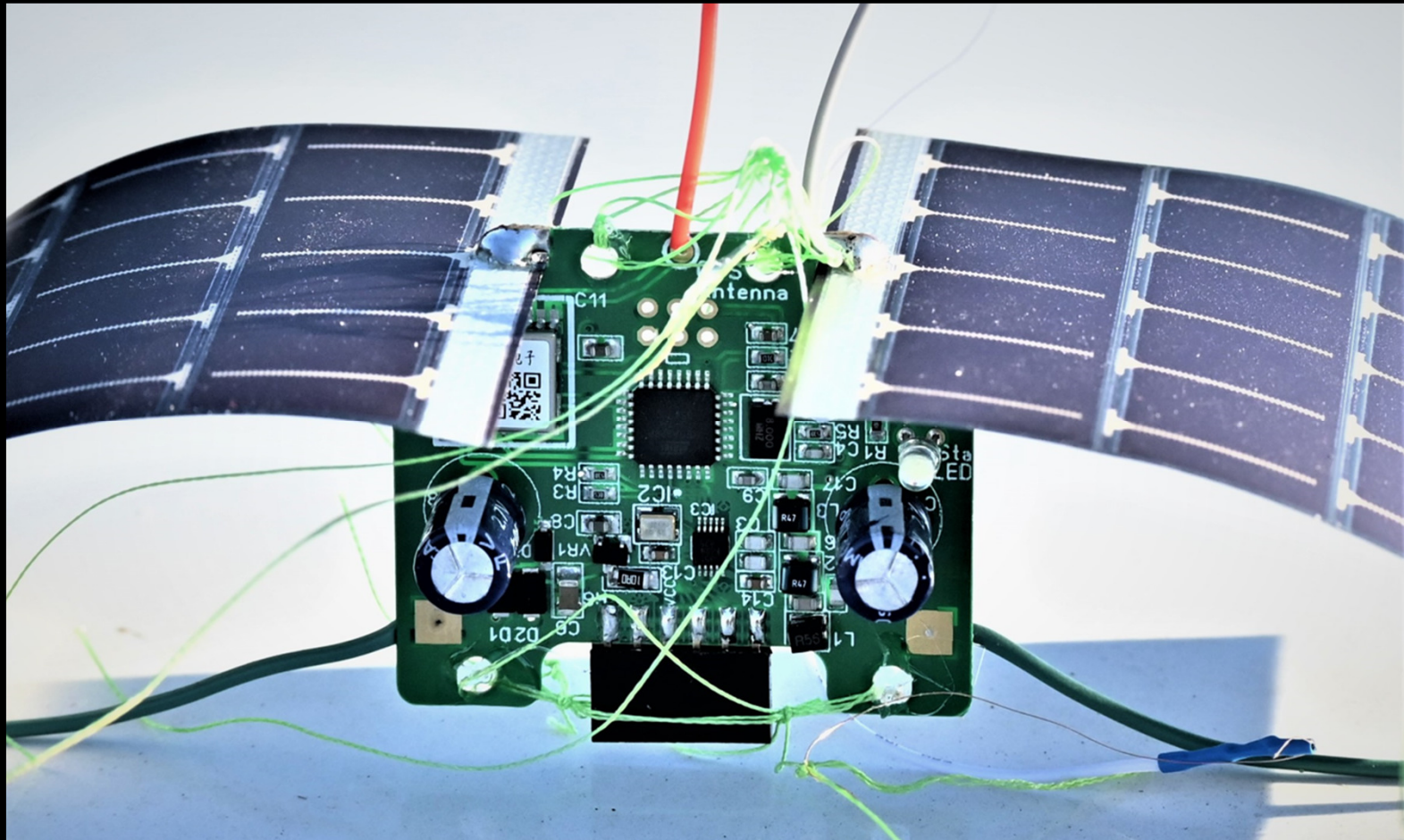
Flight Crew Pics



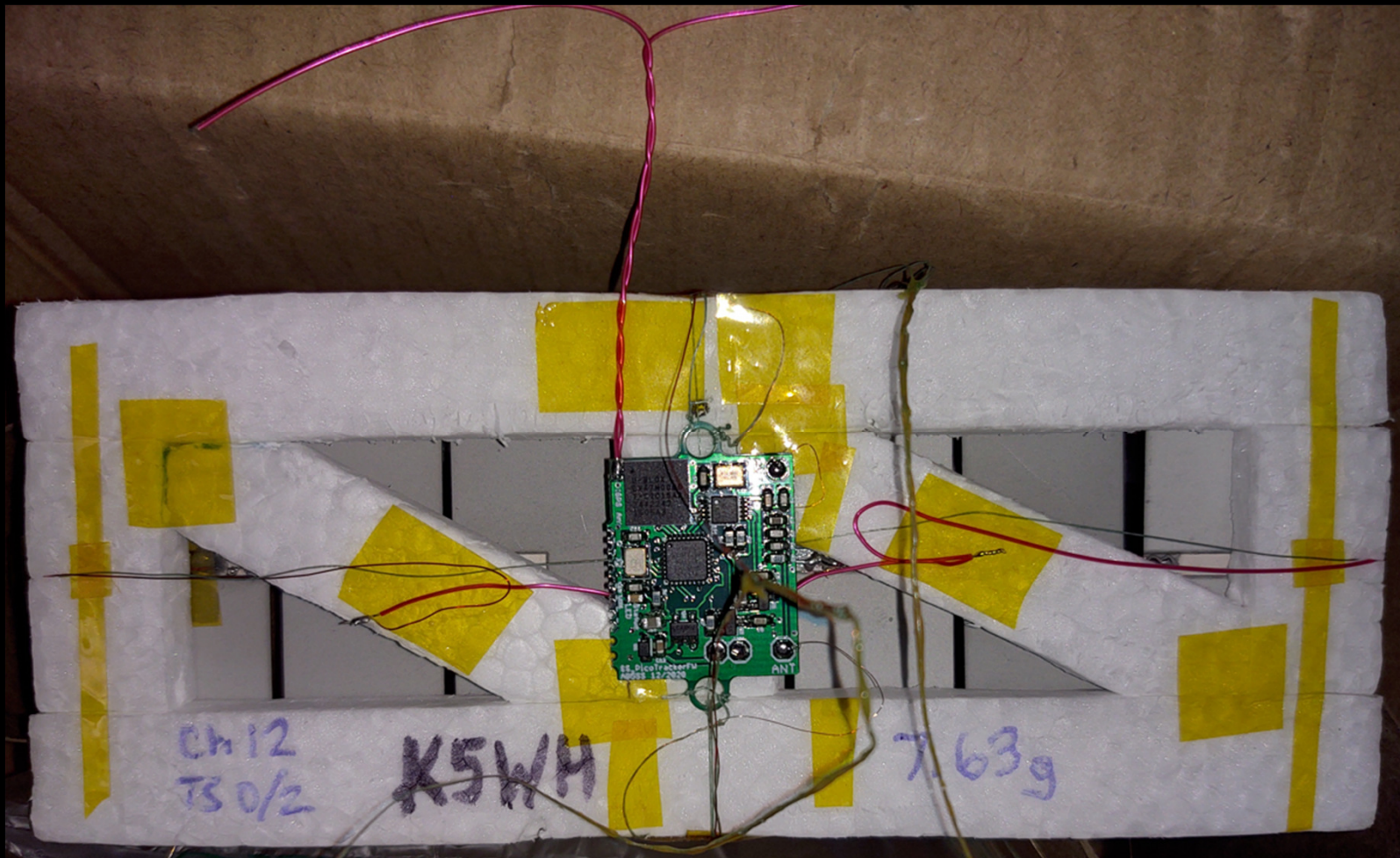
Qrp-Labs Lightaprs



Early ZachTek



AB5SS Pico Tracker



AB5SS Pico Tracker



AB5SS Pico Tracker

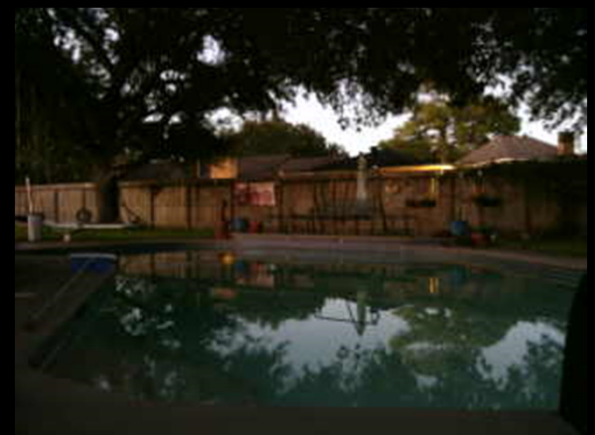


Future Ideas on trackers Pecan 12a

- APRS with hi-res normal and zoom pictures



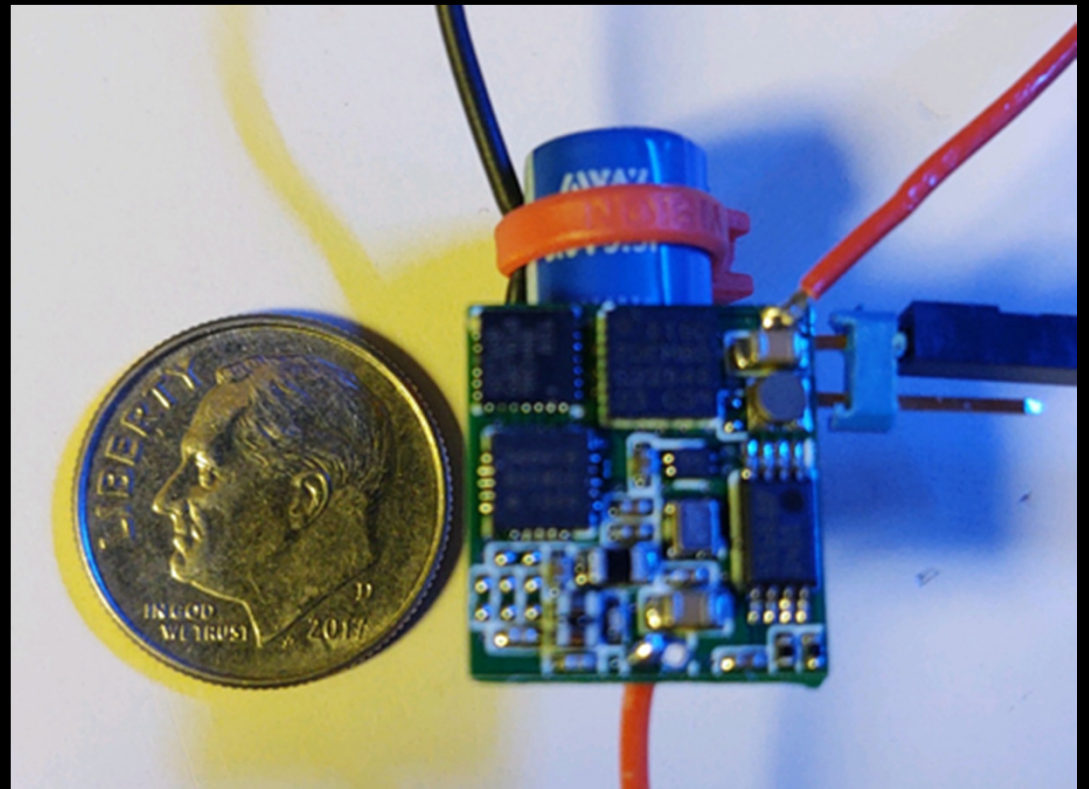
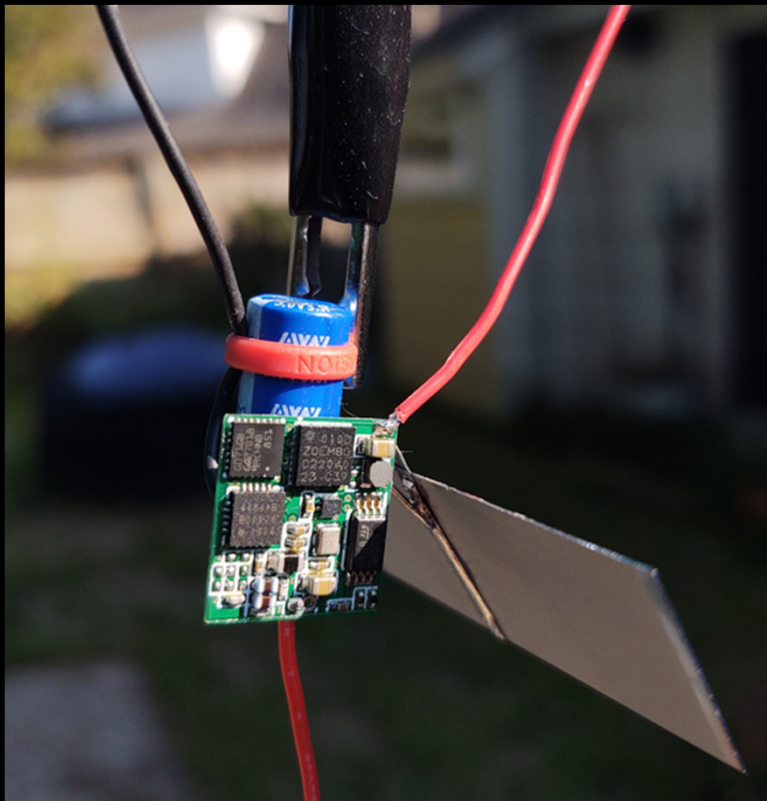
Pecan 12a images



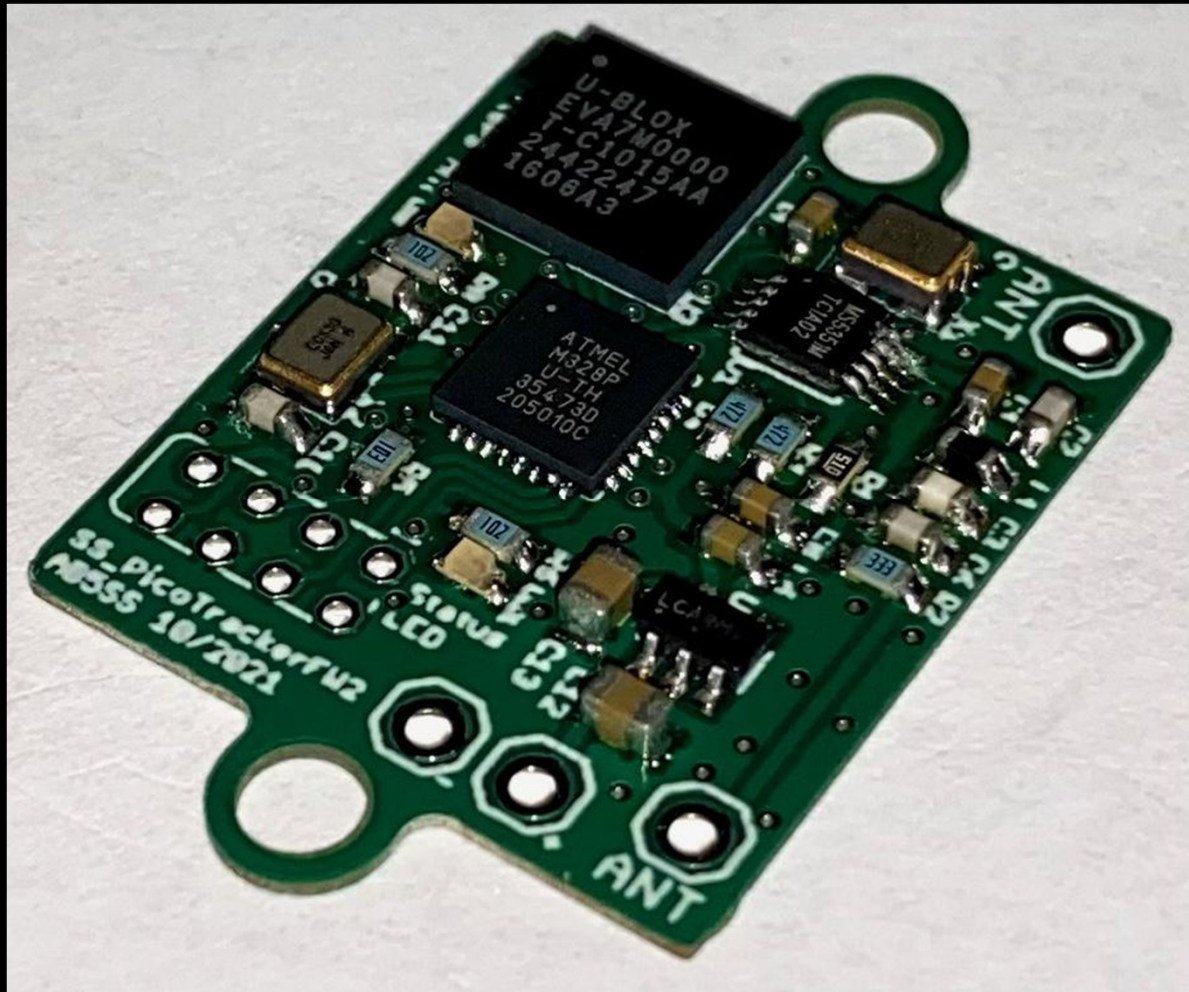
Pecan 12a images



Femto 5A



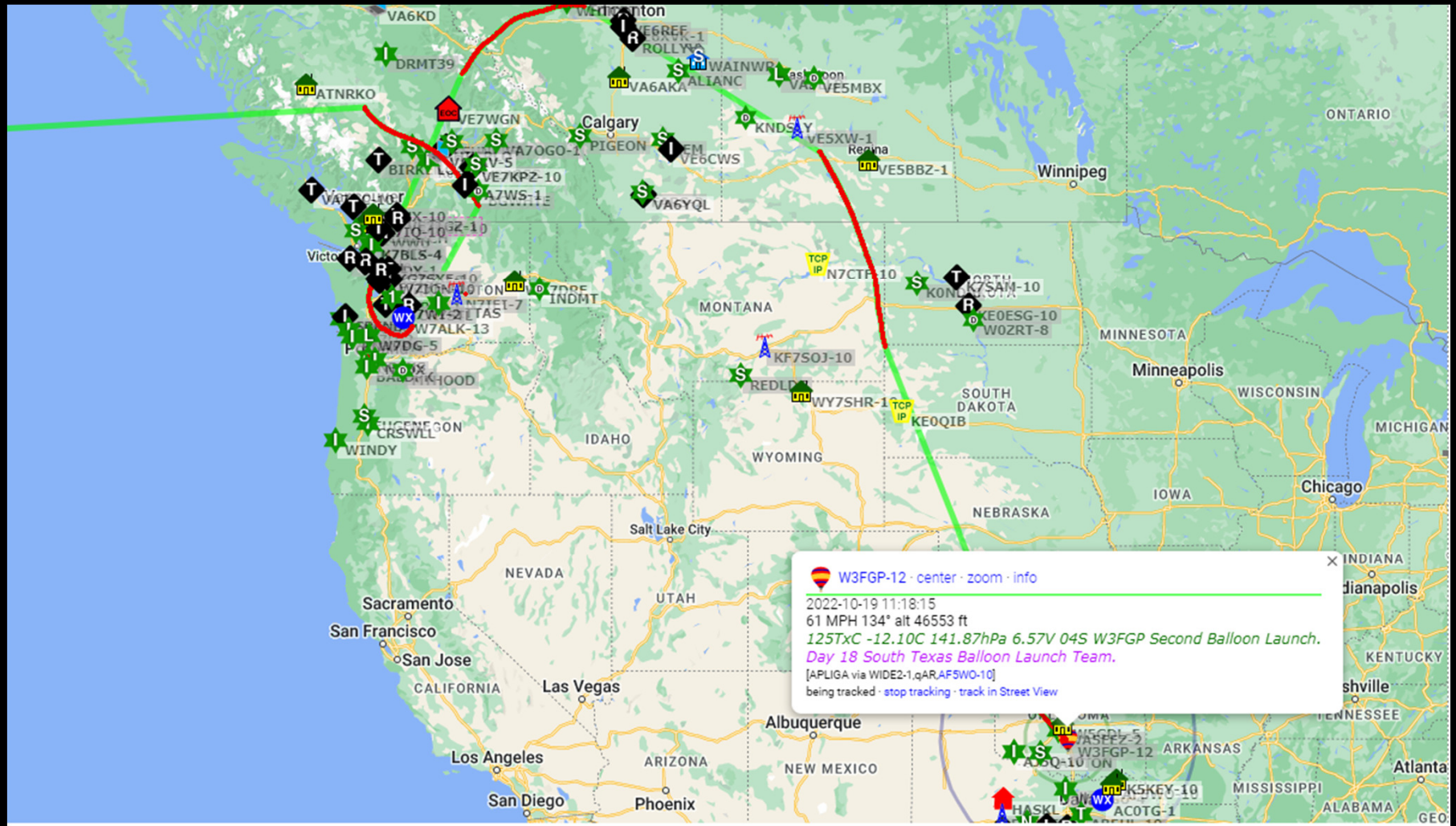
New AB5SS Pico Tracker



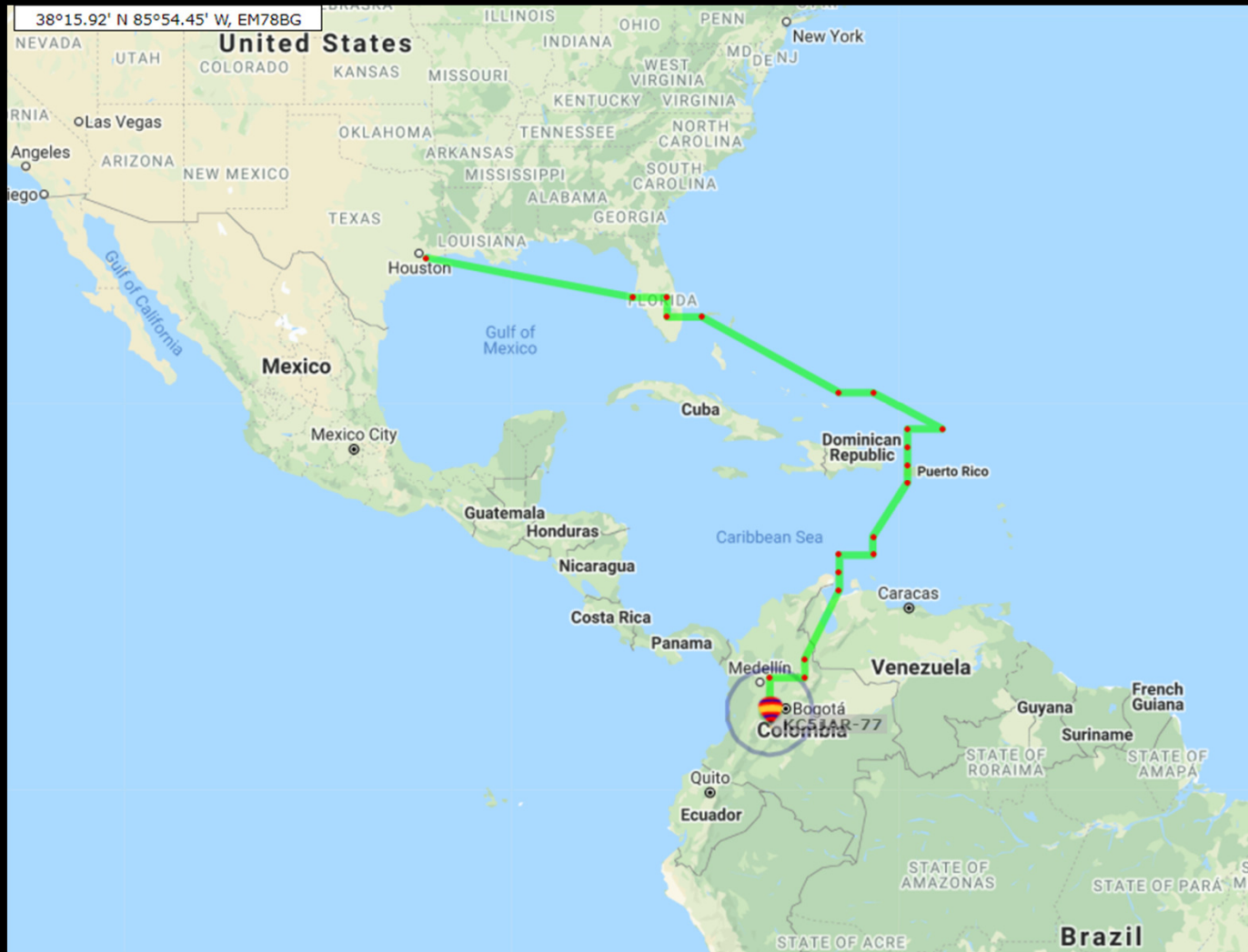
W3FGP from GHH Tailgate 2022



W3FGP from GHH Tailgate 2022



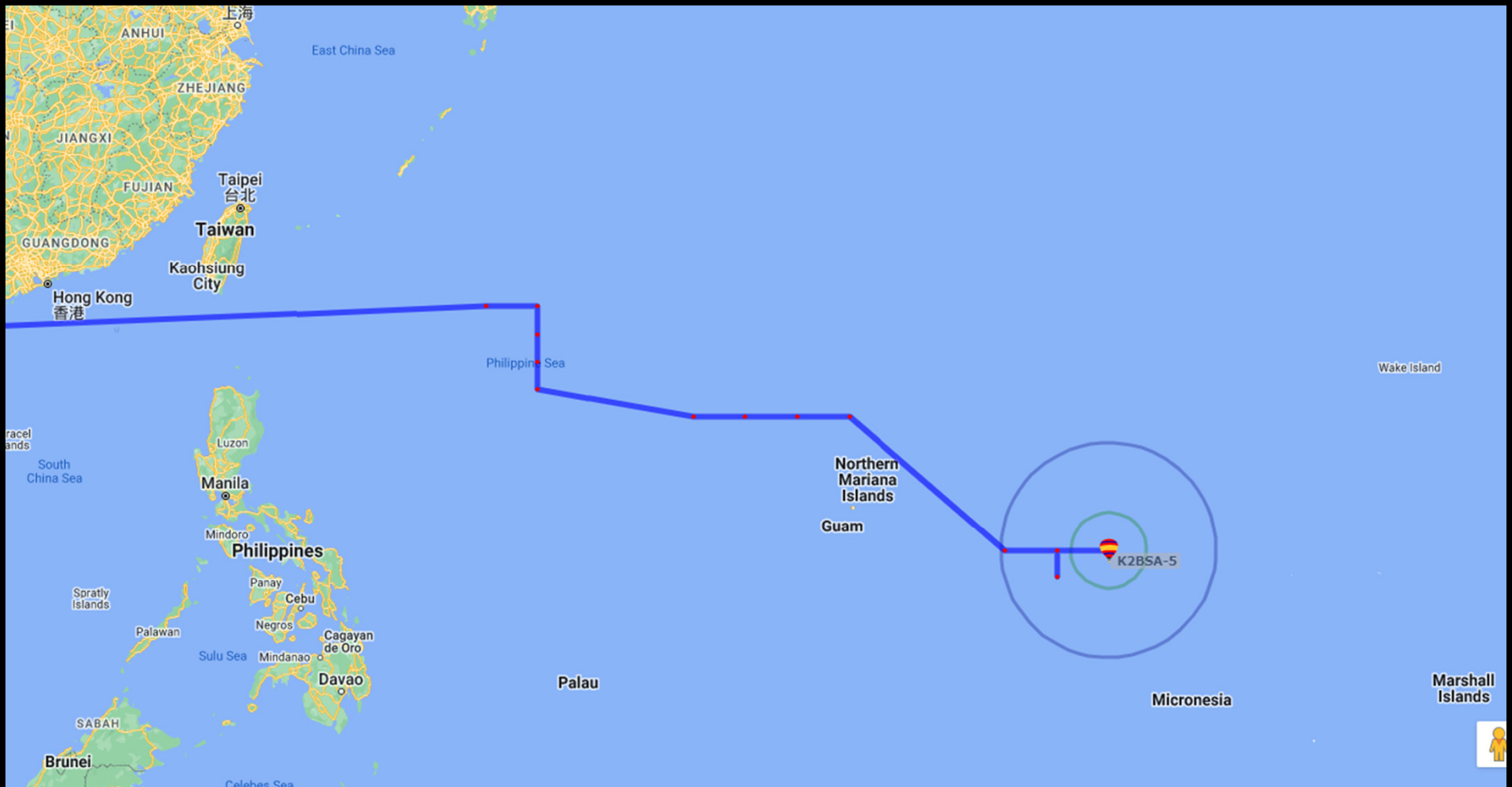
APRS.FI BLT-77 KC5JAR JOTA 2021



Boy Scouts JOTA Oct. 22

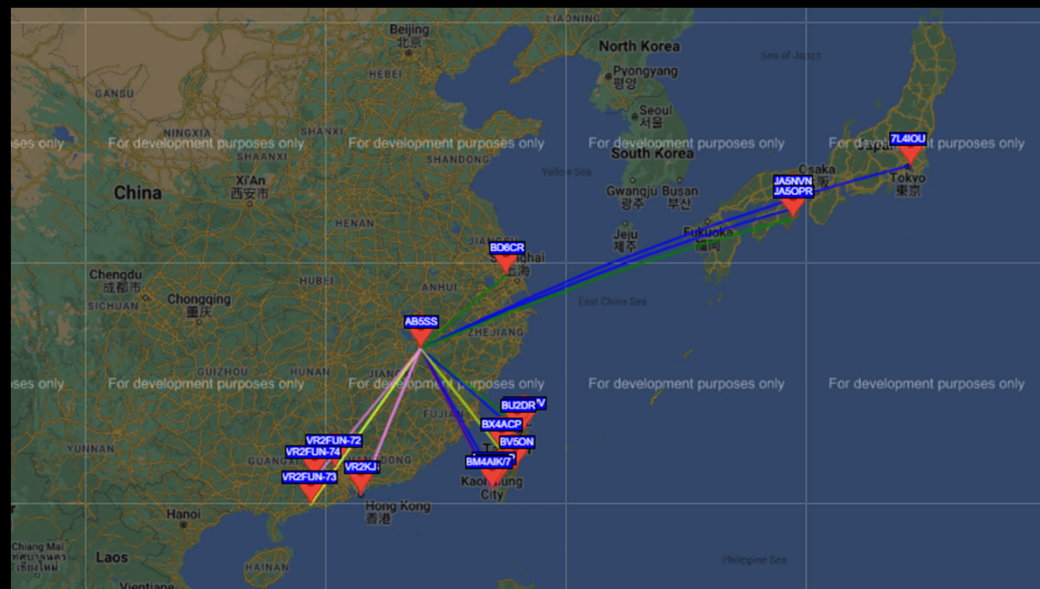


Boy Scouts JOTA Oct. 22



AB5SS BLT-107

Last seen over China



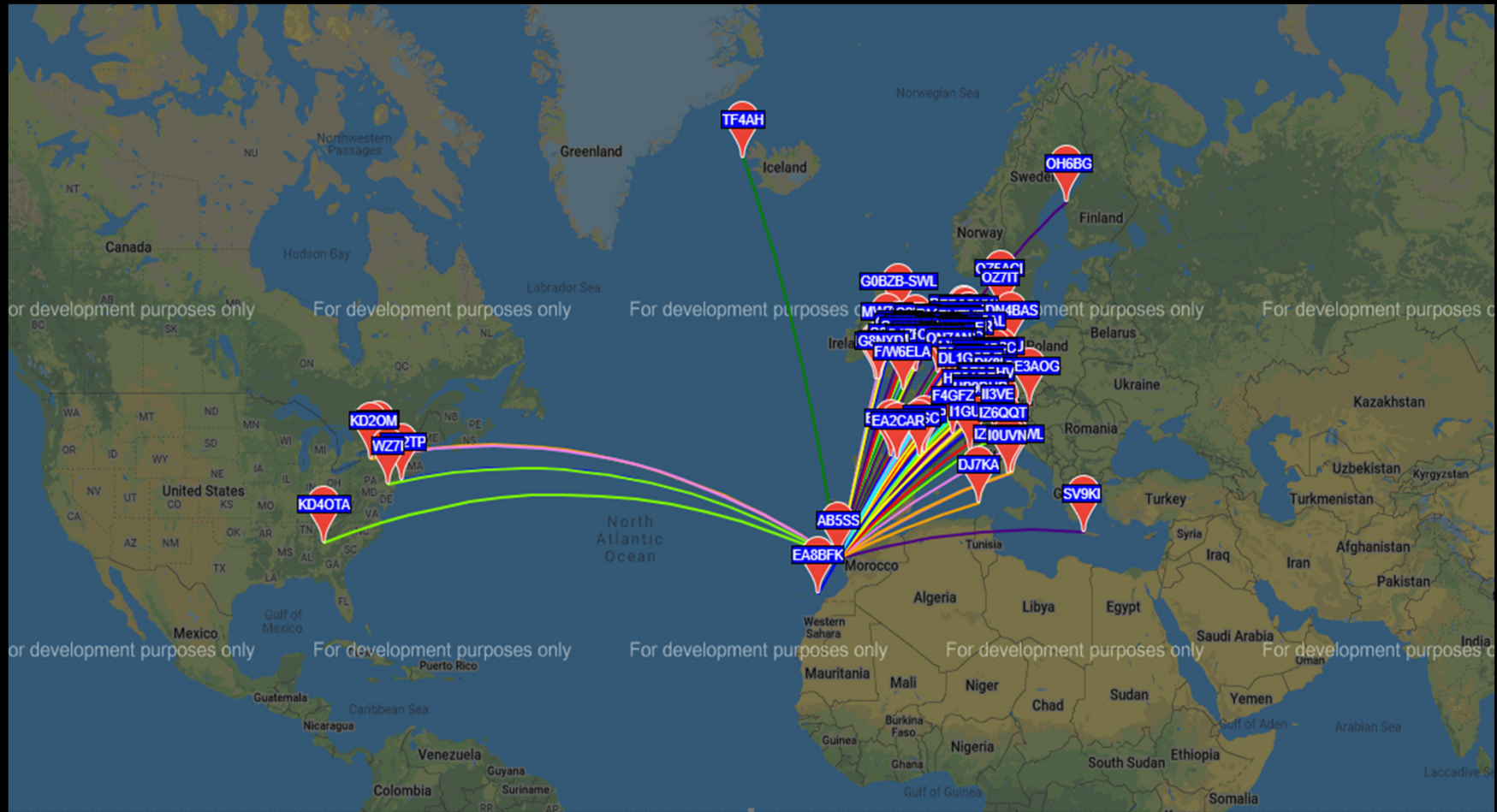
Launch Sites

- **Wharton Airport, Wharton Texas (popovers)**
- **Scobie Field, George Bush Park, West Houston (floaters)**
- **Matzke Park, NW Houston (floaters)**

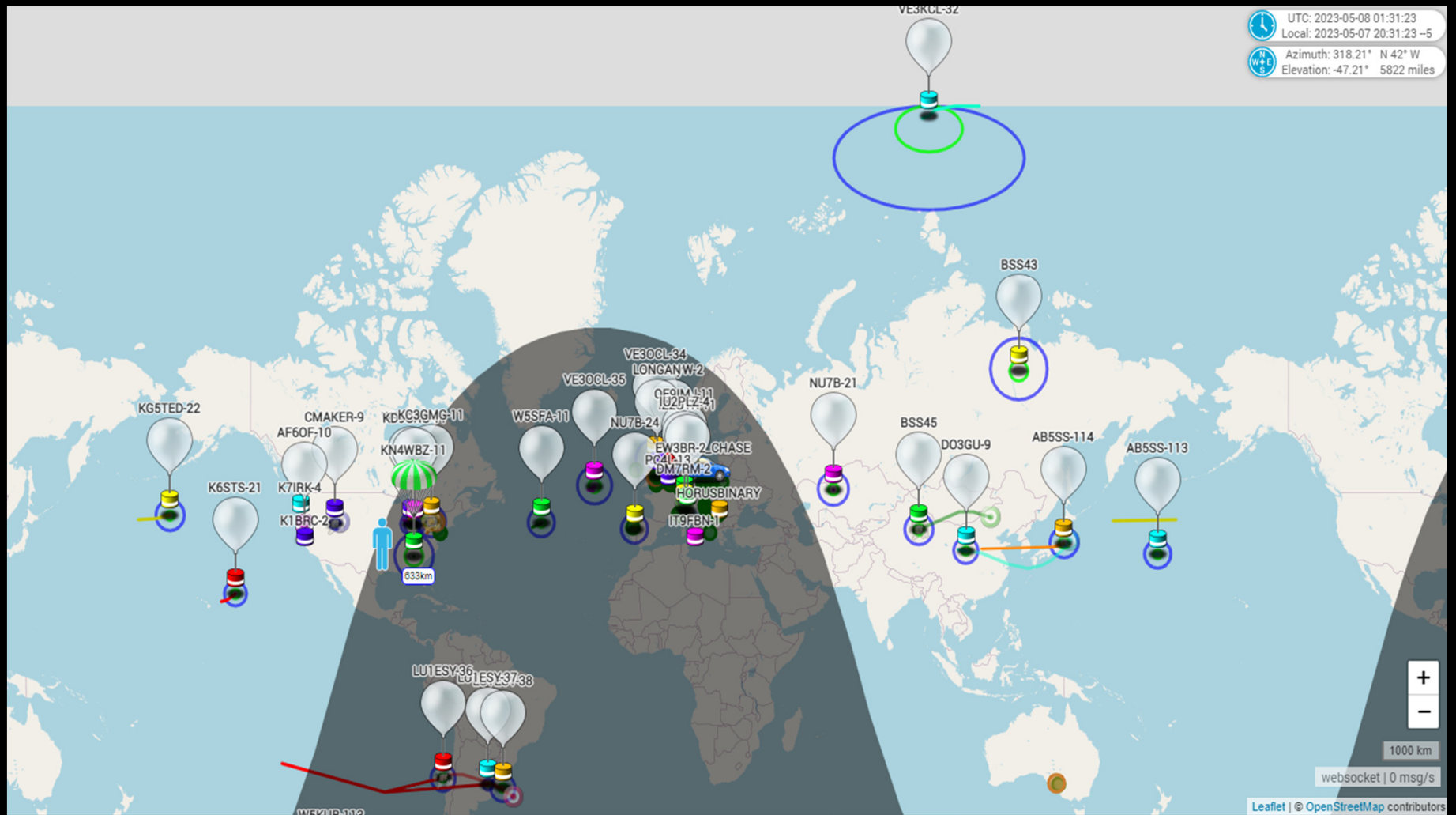
Tracking Sites

- APRS: <http://aprs.fi>
- WSPR:
[http://www.wsprnet.org/drupal/wsprnet/m
ap](http://www.wsprnet.org/drupal/wsprnet/map)
- HabHub: <https://amateur.sondehub.org/>

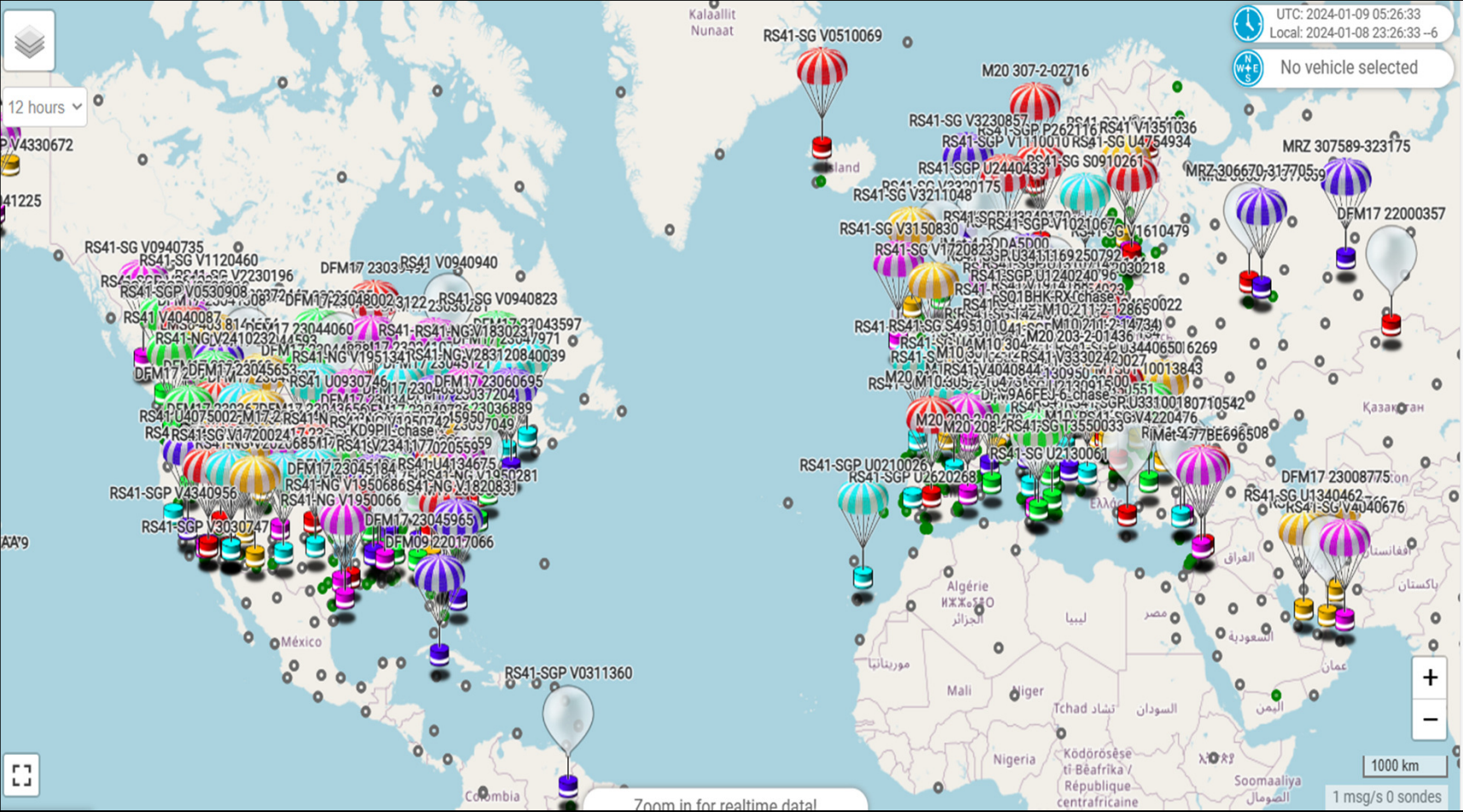
WSPRNET.ORG BLT-76



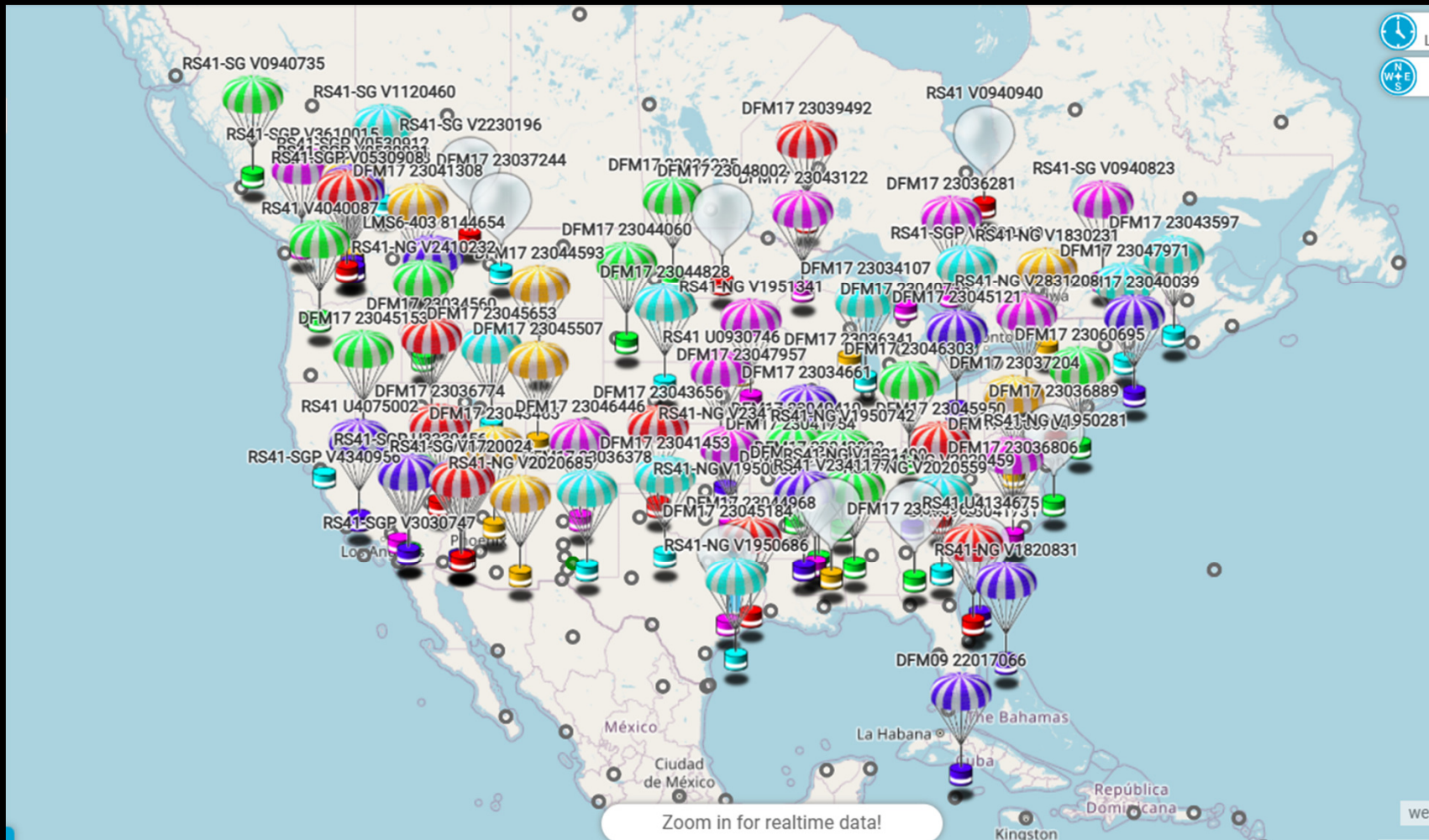
AMATEUR.SONDEHUB.ORG



SONDEHUB.ORG



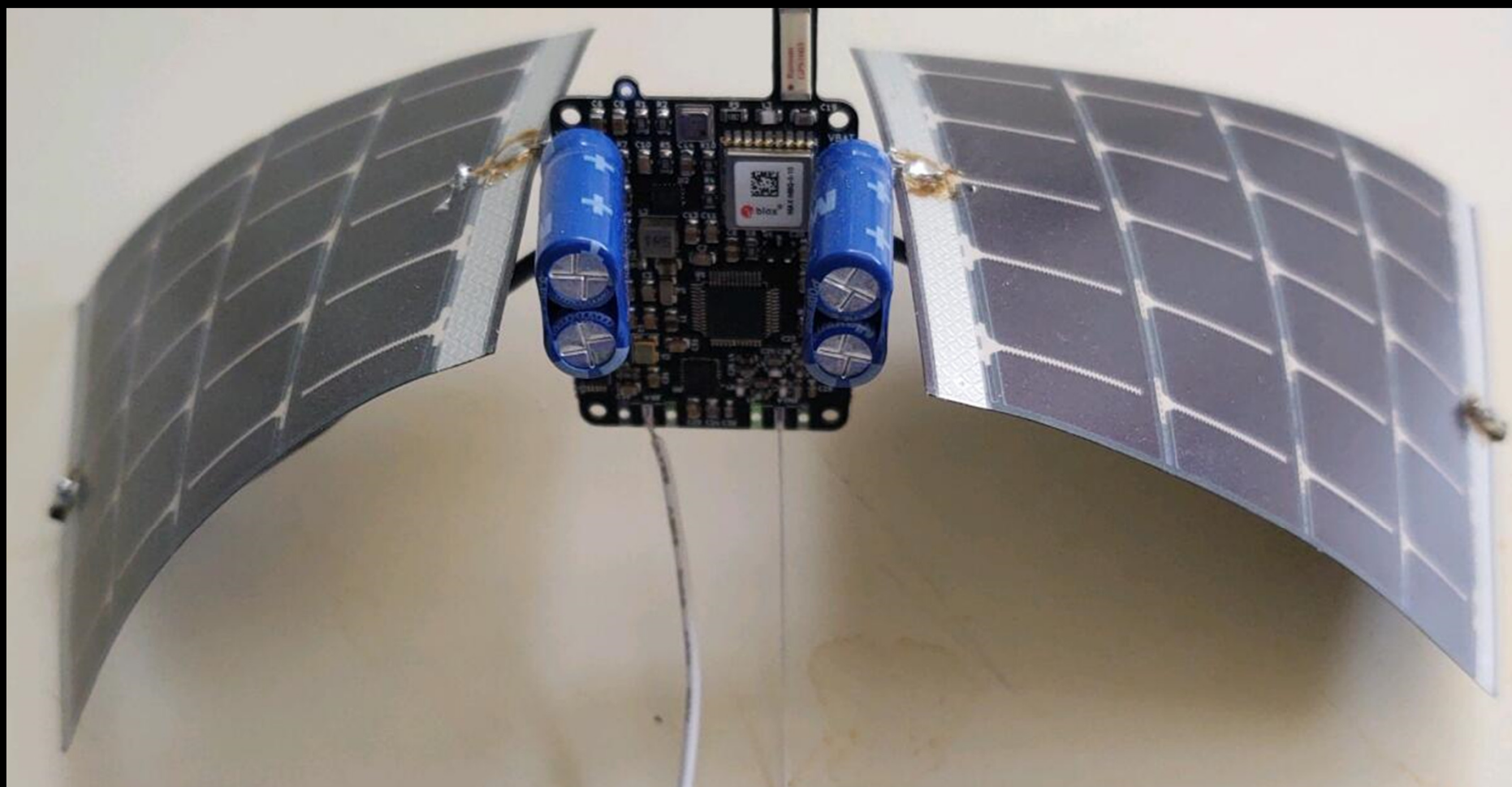
SONDEHUB.ORG



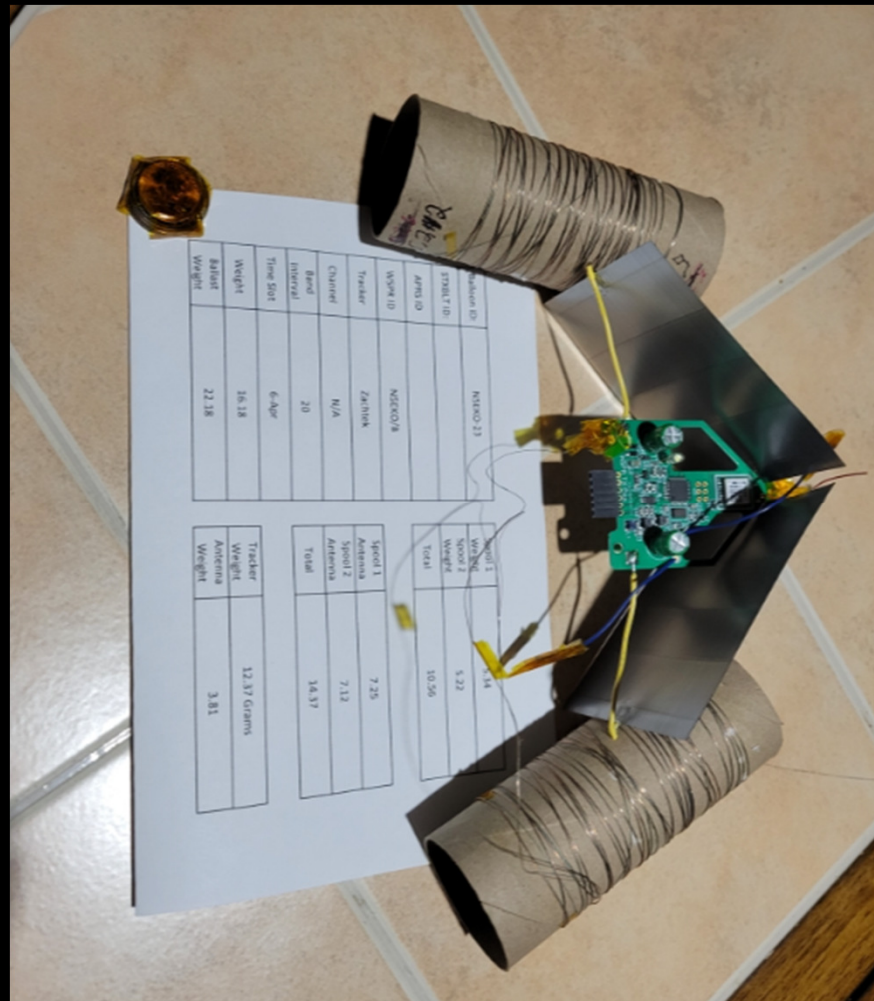
Trackers GHH 2023

W3FGP wspr

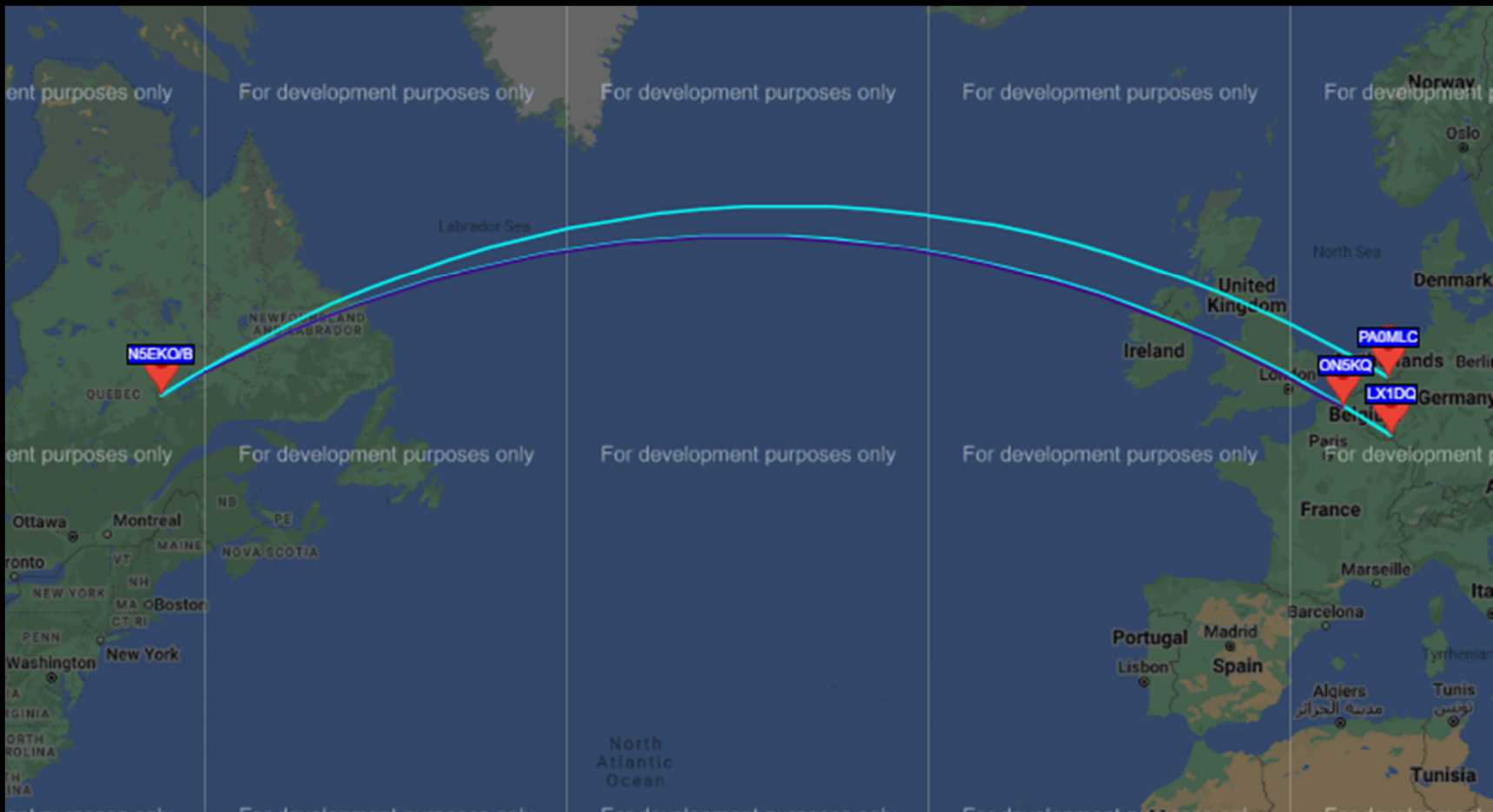
W3FGP-13 aprs



Trackers GHH 2023 N5EKO/B wspr N5EKO-109 aprs



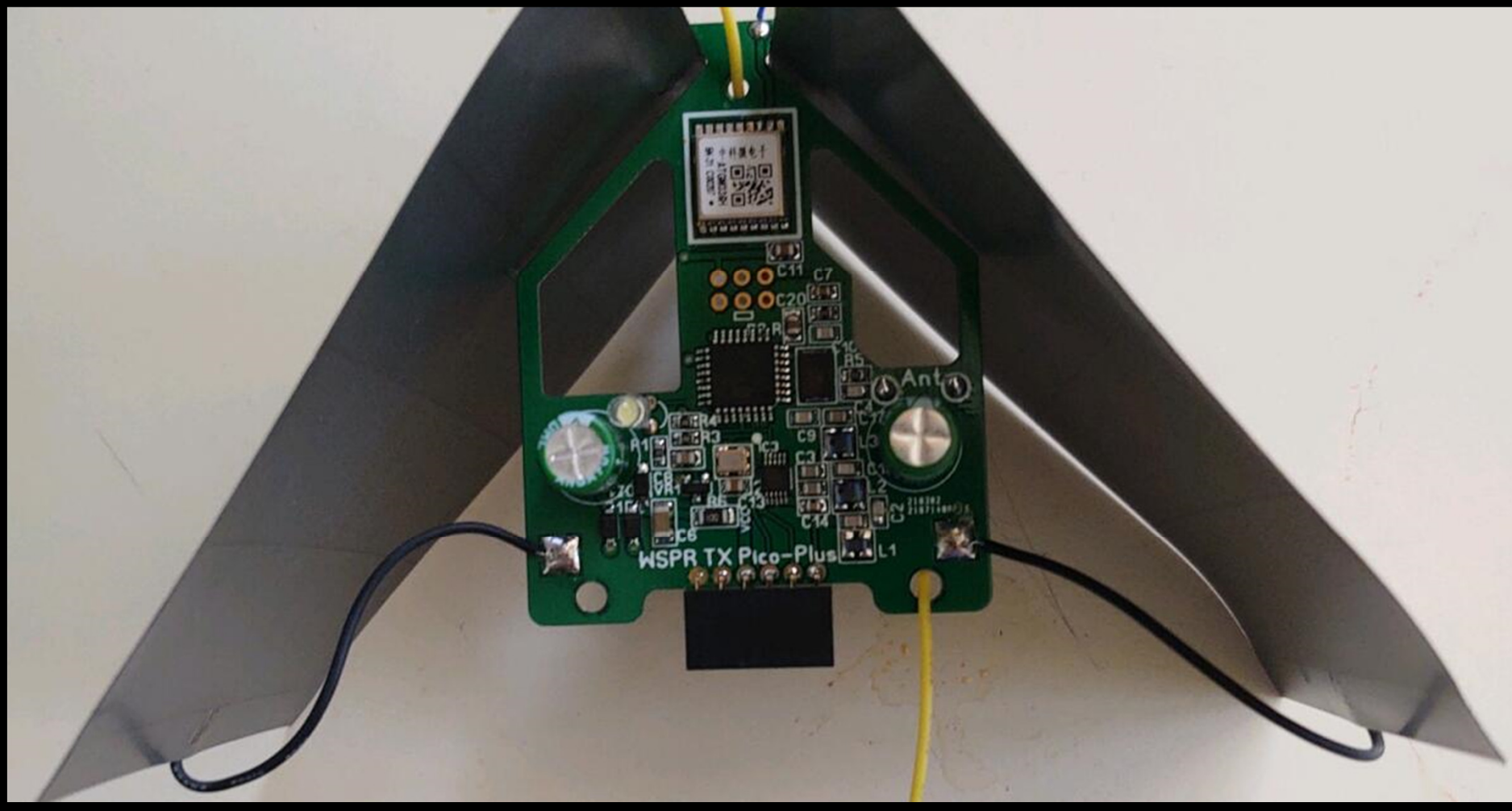
4 times around, then silent
N5EKO/B wspr
N5EKO-109 aprs



Trackers GHH 2023

K5WH/5 wspr

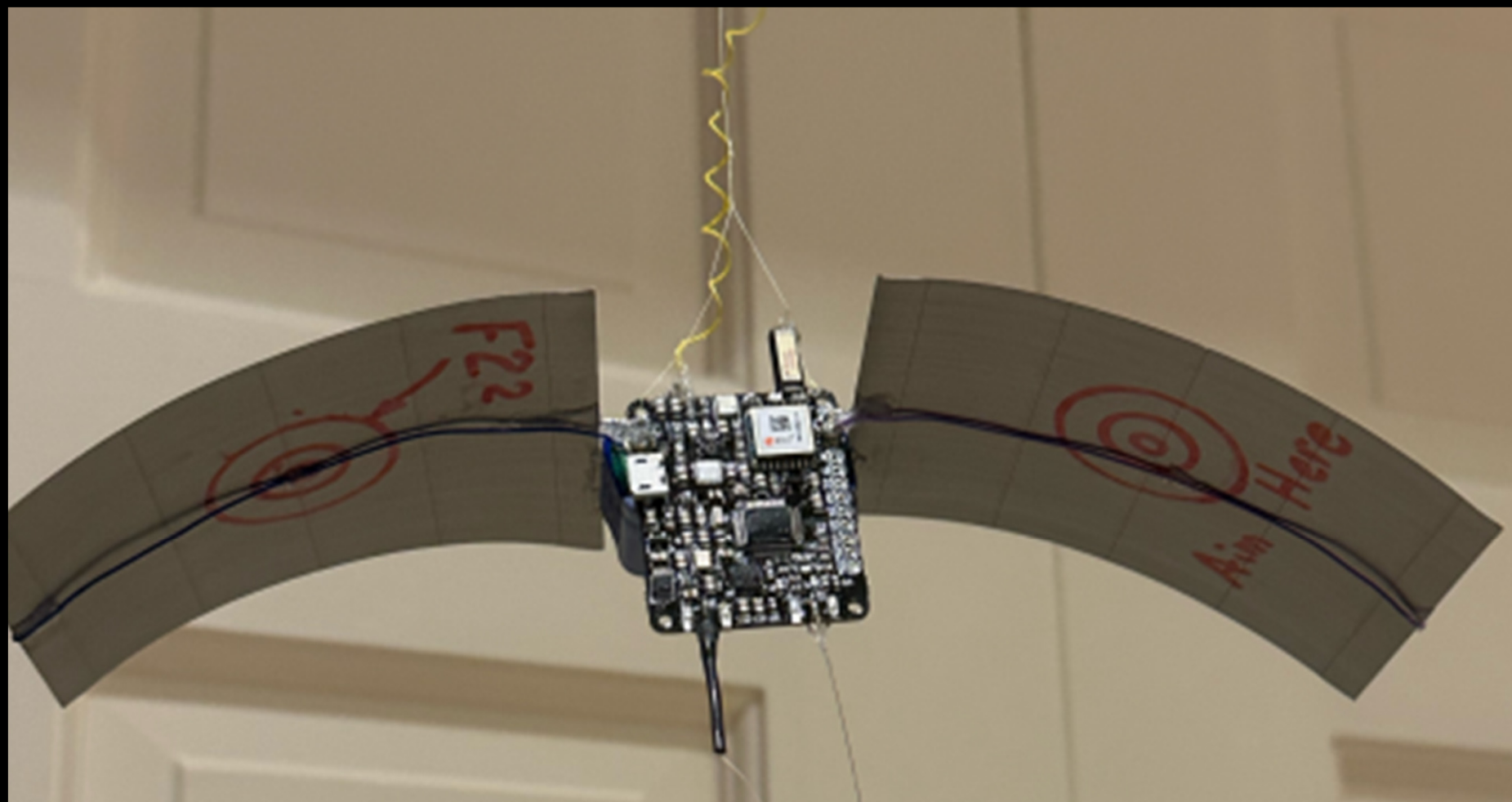
K5WH-108 aprs



Trackers GHH 2023

KG5BBF wspr

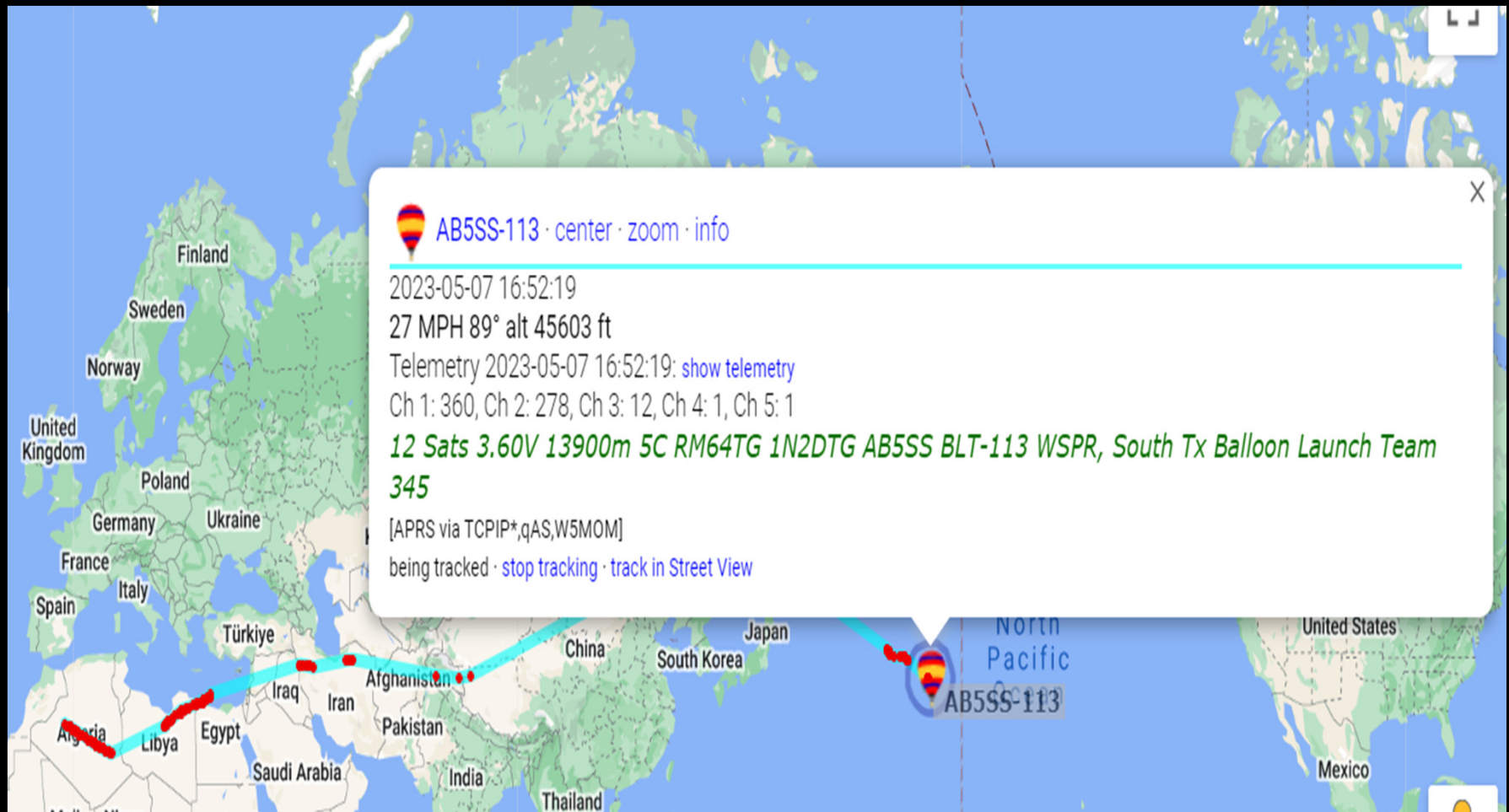
KG5BBF-1 aprs



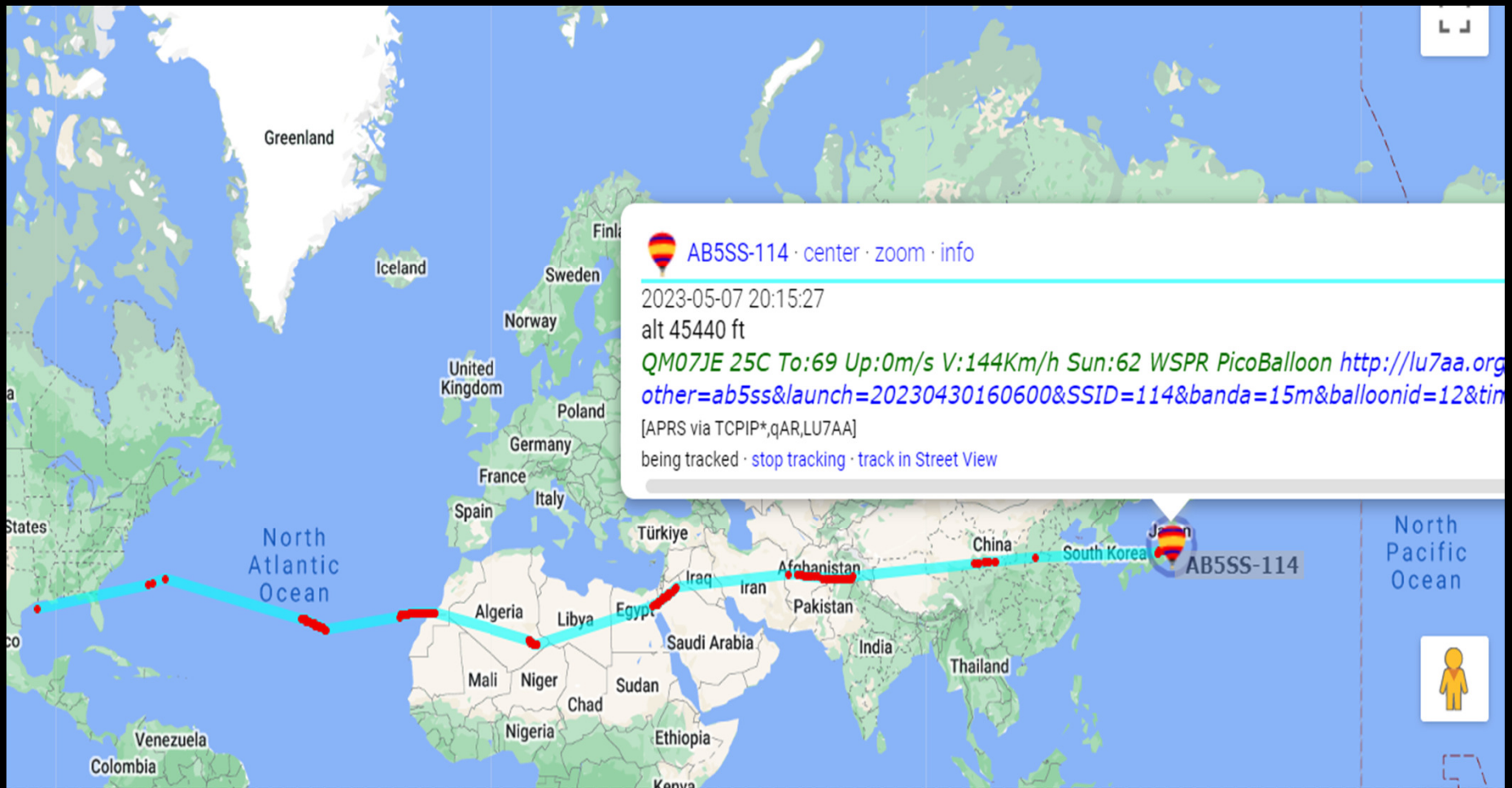
Trackers GHH 2023 N5EKO wspr



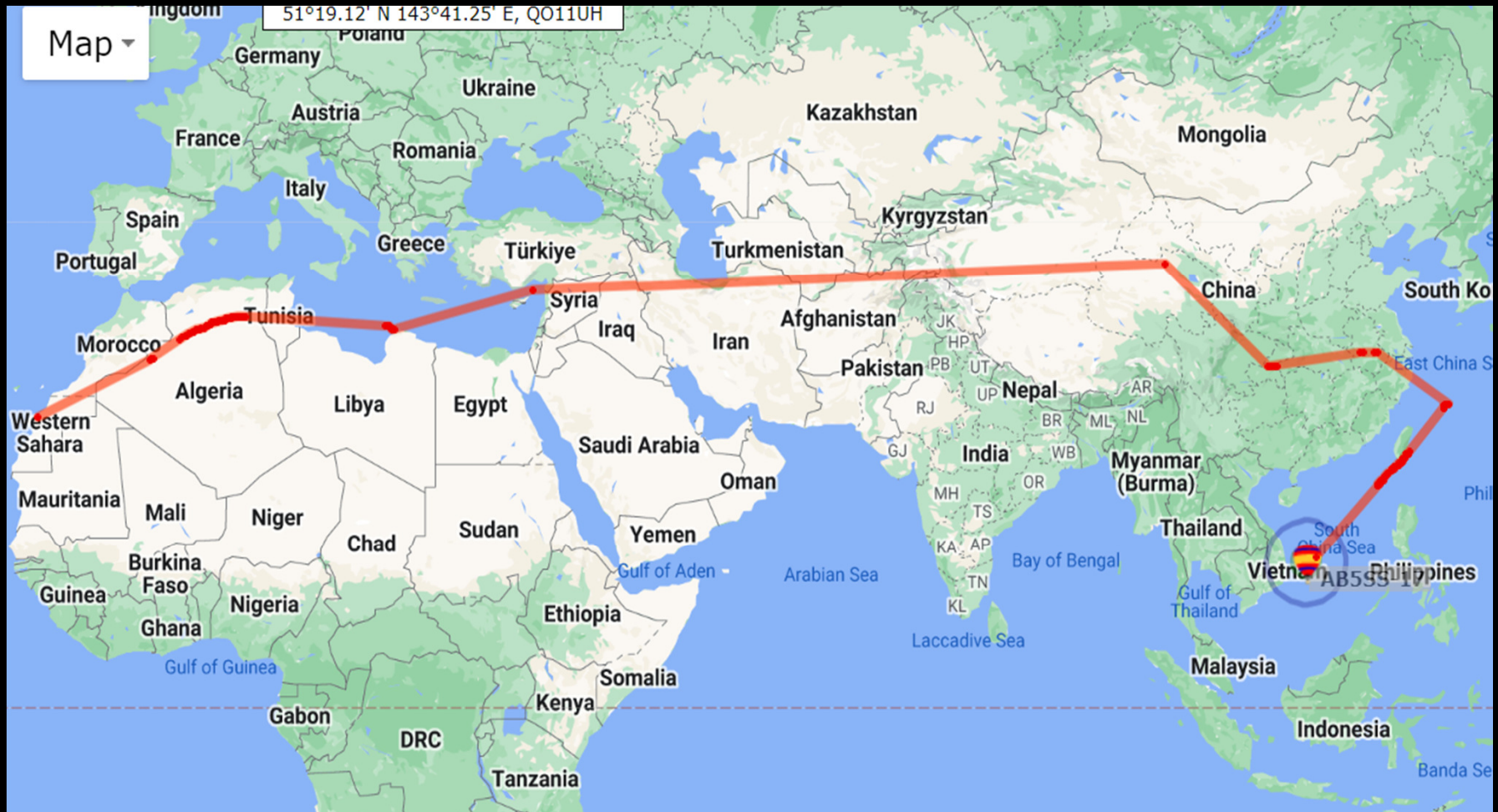
Launched 4/28/23 AB5SS BLT-113 wspr 20m



Launched 4/30/23 AB5SS BLT-114 wspr 15m



Launched 6/12/23 AB5SS BLT-115 wspr 17m



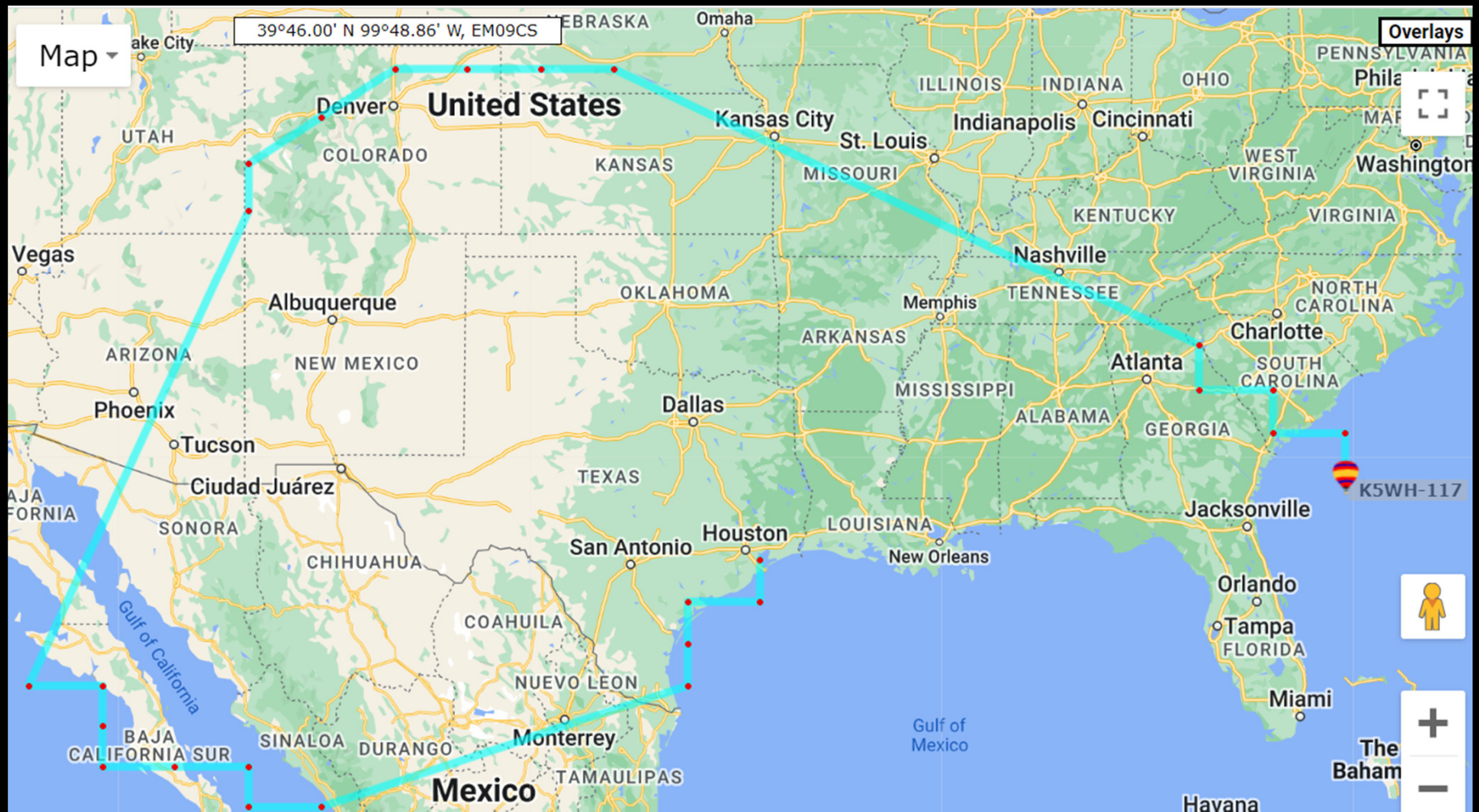
BVARC Field Day 6/24/23

K5WH-117 wspr 20m



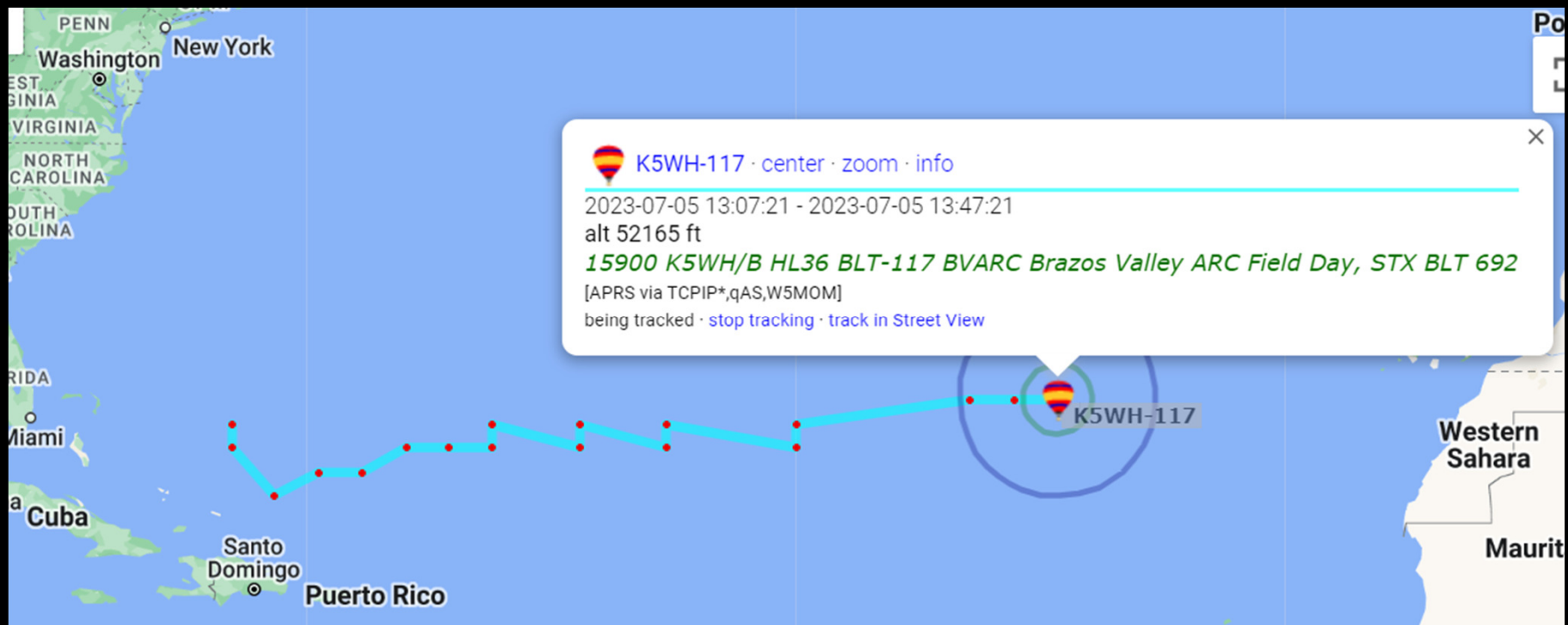
BVARC Field Day 6/24/23

K5WH-117 wspr 20m



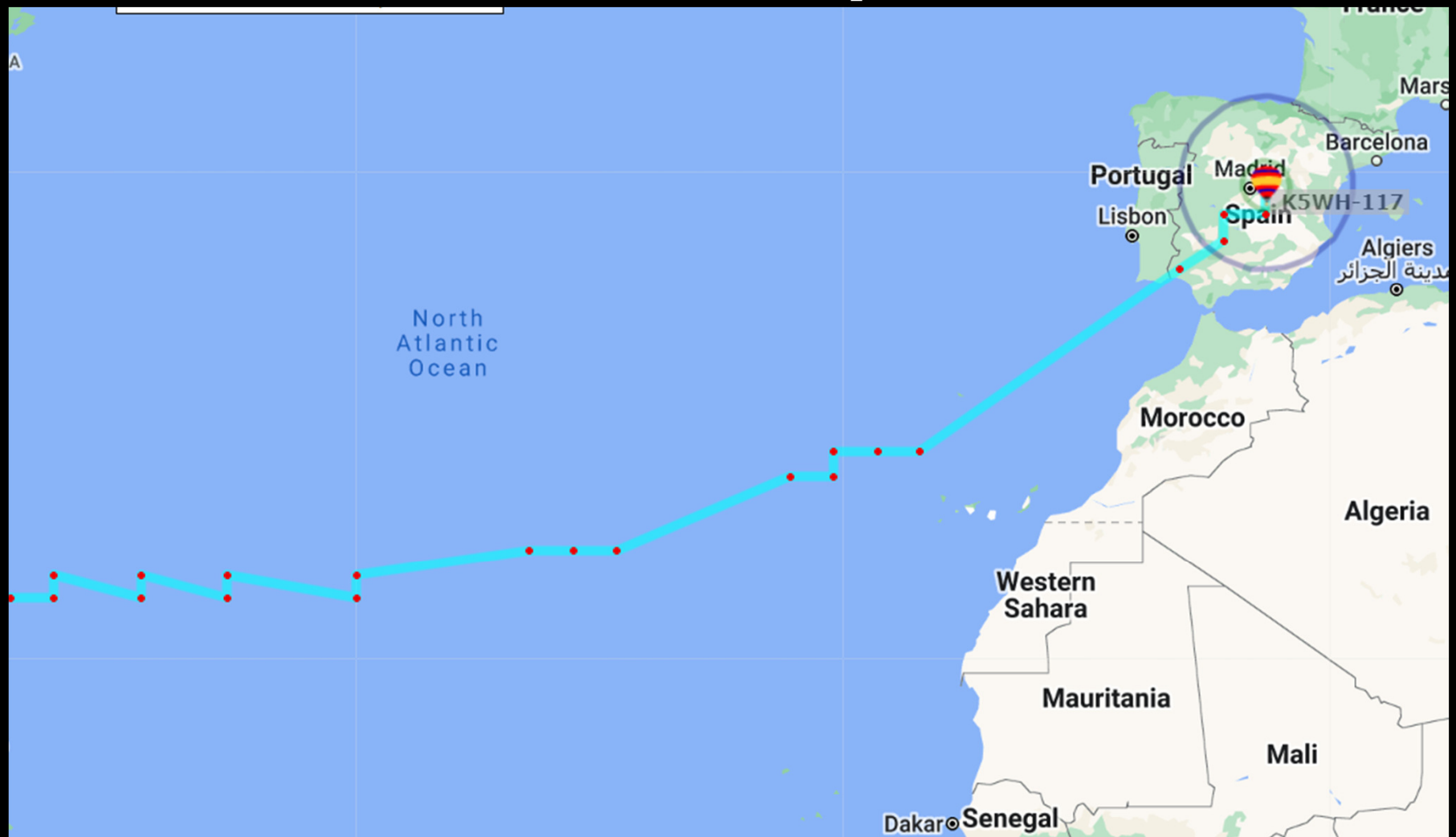
BVARC Field Day 6/24/23

K5WH-117 wspr 20m



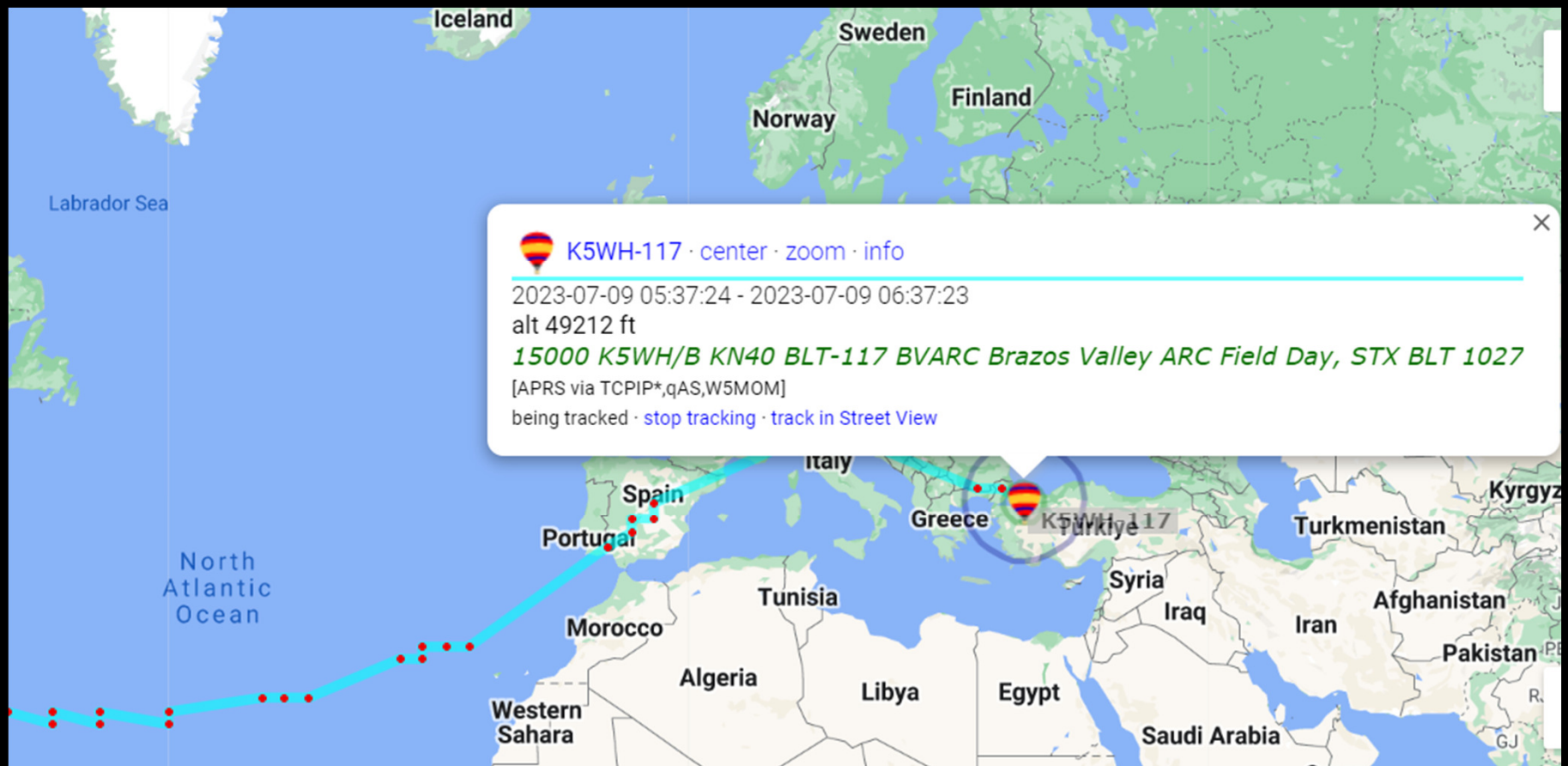
BVARC Field Day 6/24/23

K5WH-117 wspr 20m



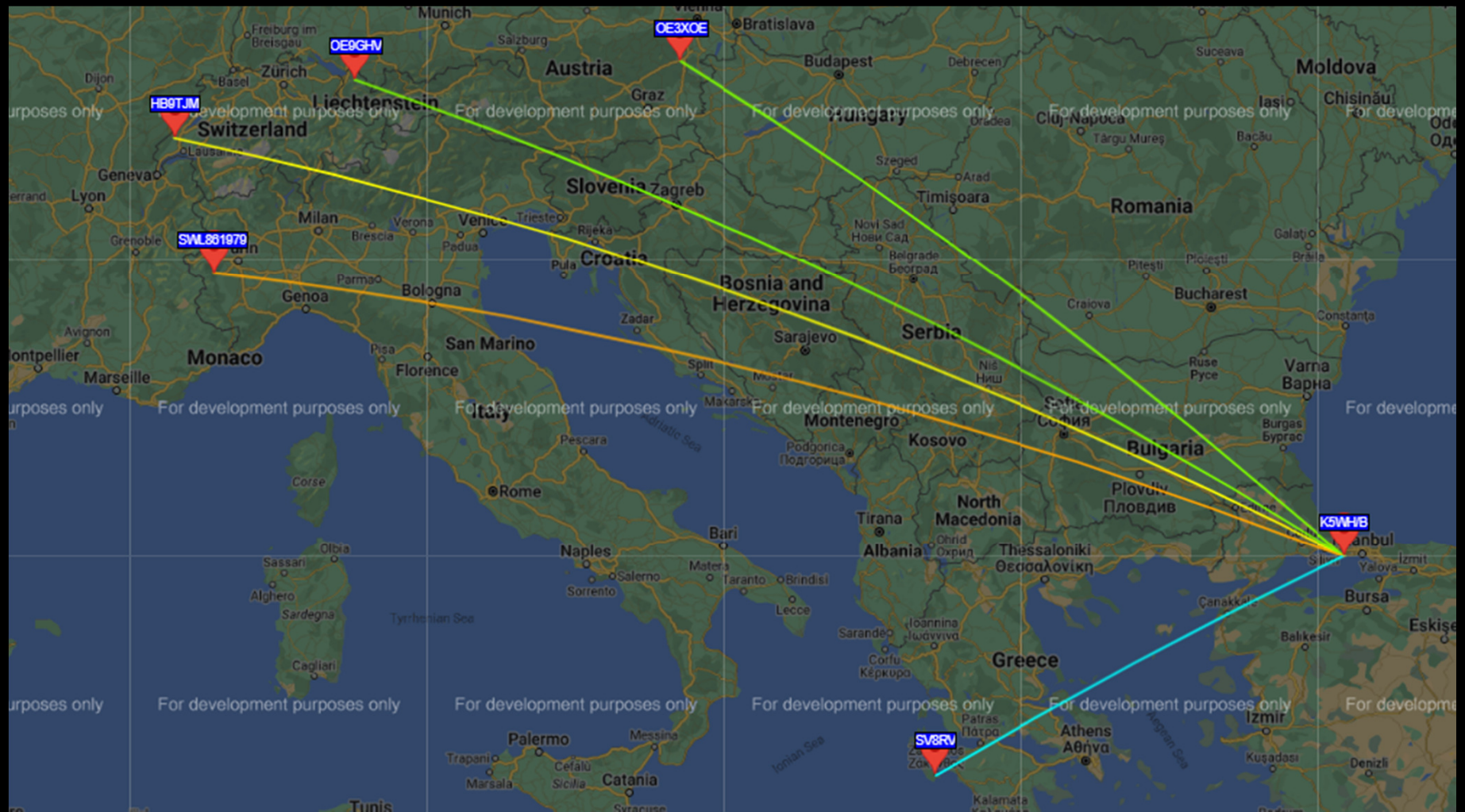
BVARC Field Day 6/24/23

K5WH-117 wspr 20m



BVARC Field Day 6/24/23

K5WH-117 wspr 20m



BVARC Field Day 6/24/23

K5WH-117 wspr 20m



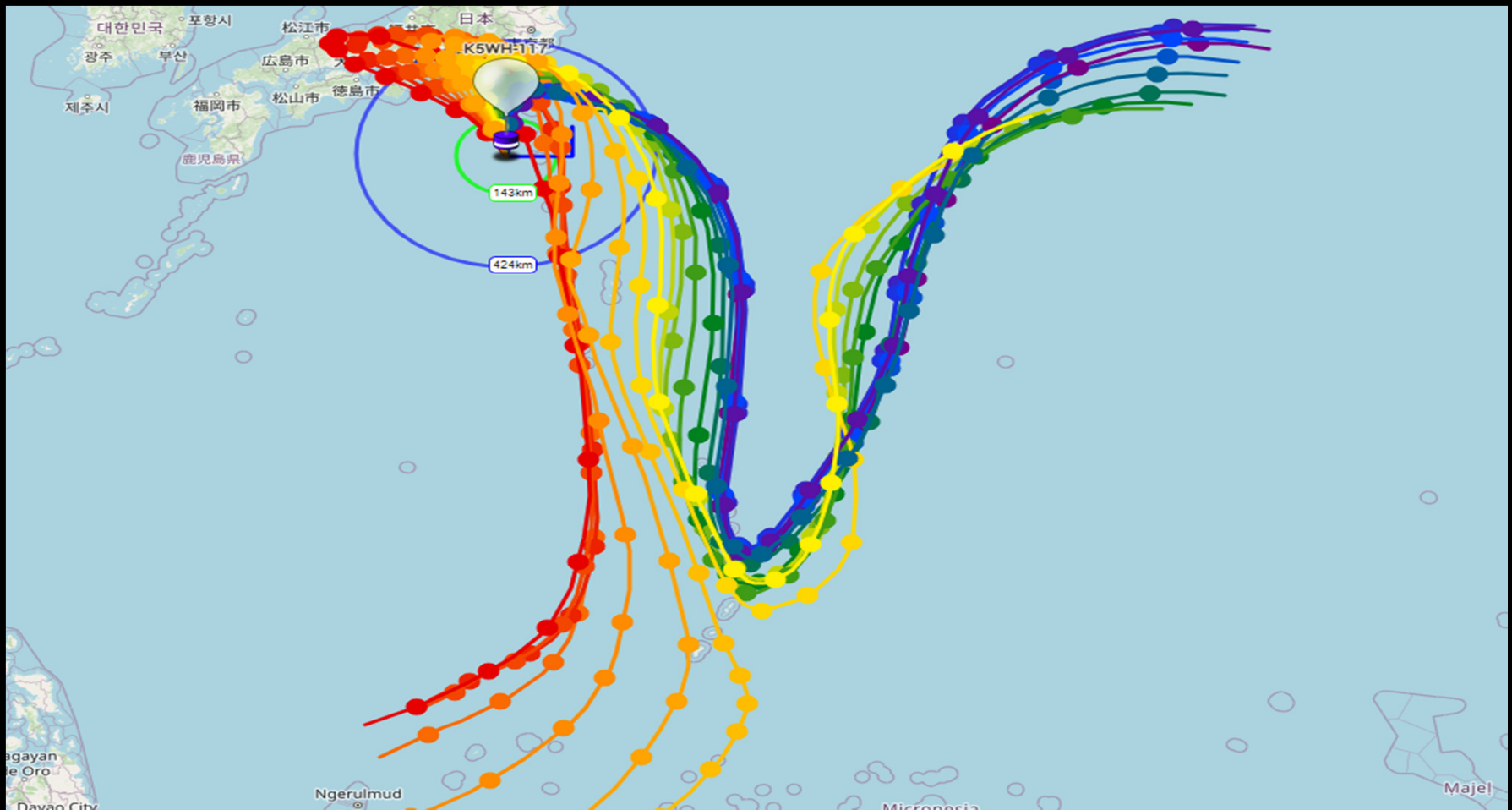
BVARC Field Day 6/24/23

K5WH-117 wspr 20m

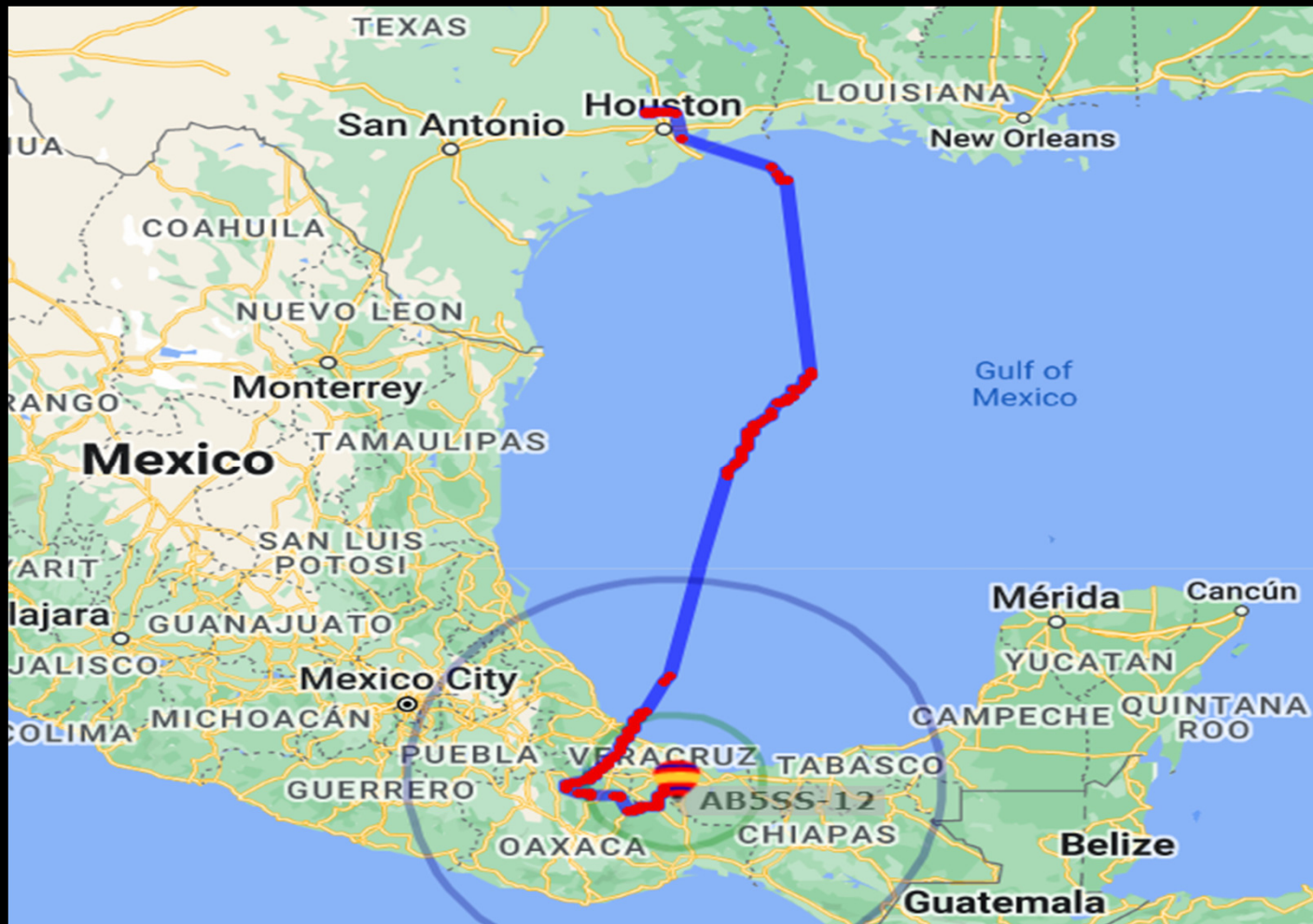


BVARC Field Day 6/24/23

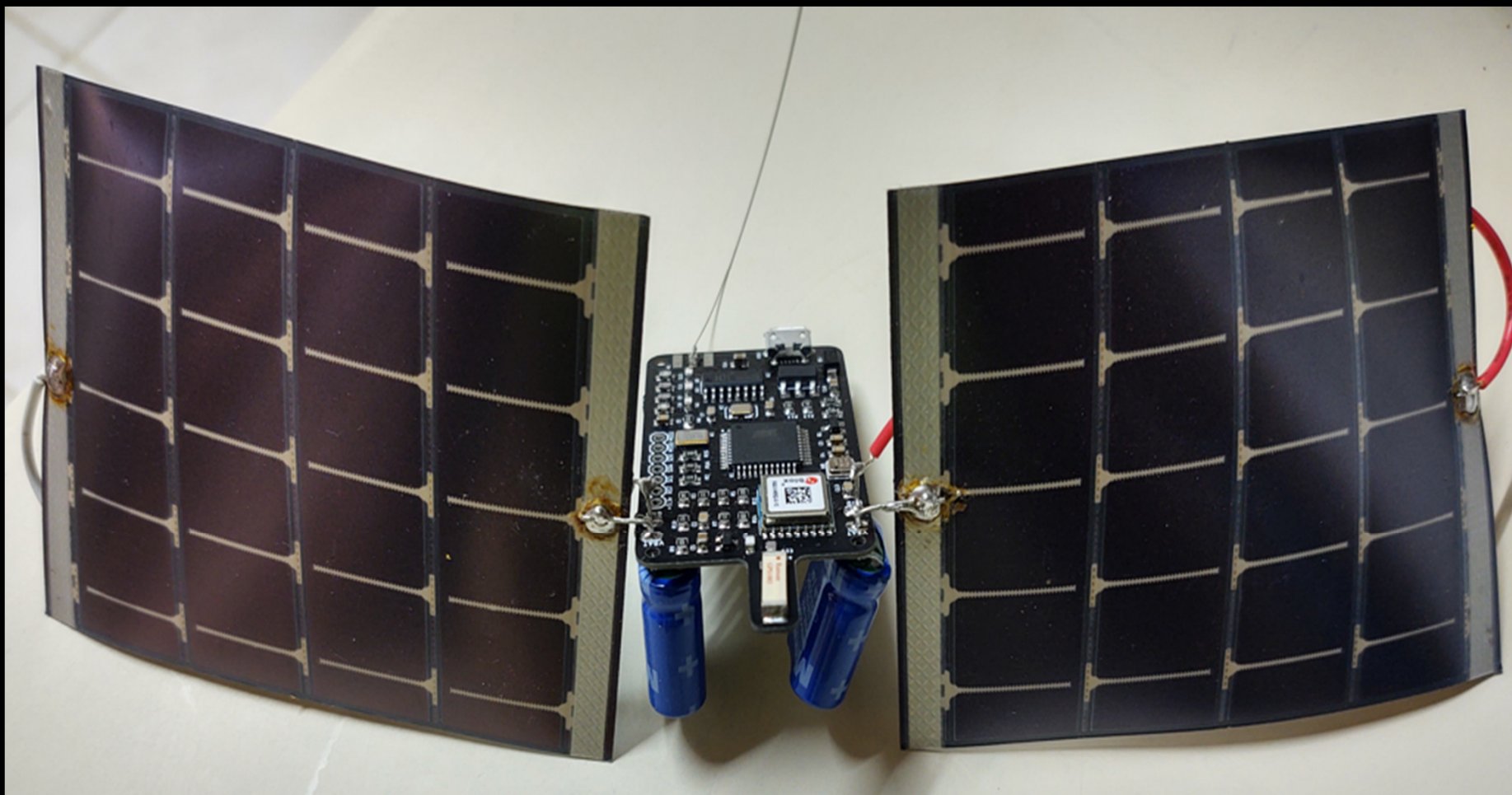
K5WH-117 wspr 20m



Launched 6/29/23 AB5SS BLT-118 wspr 12m

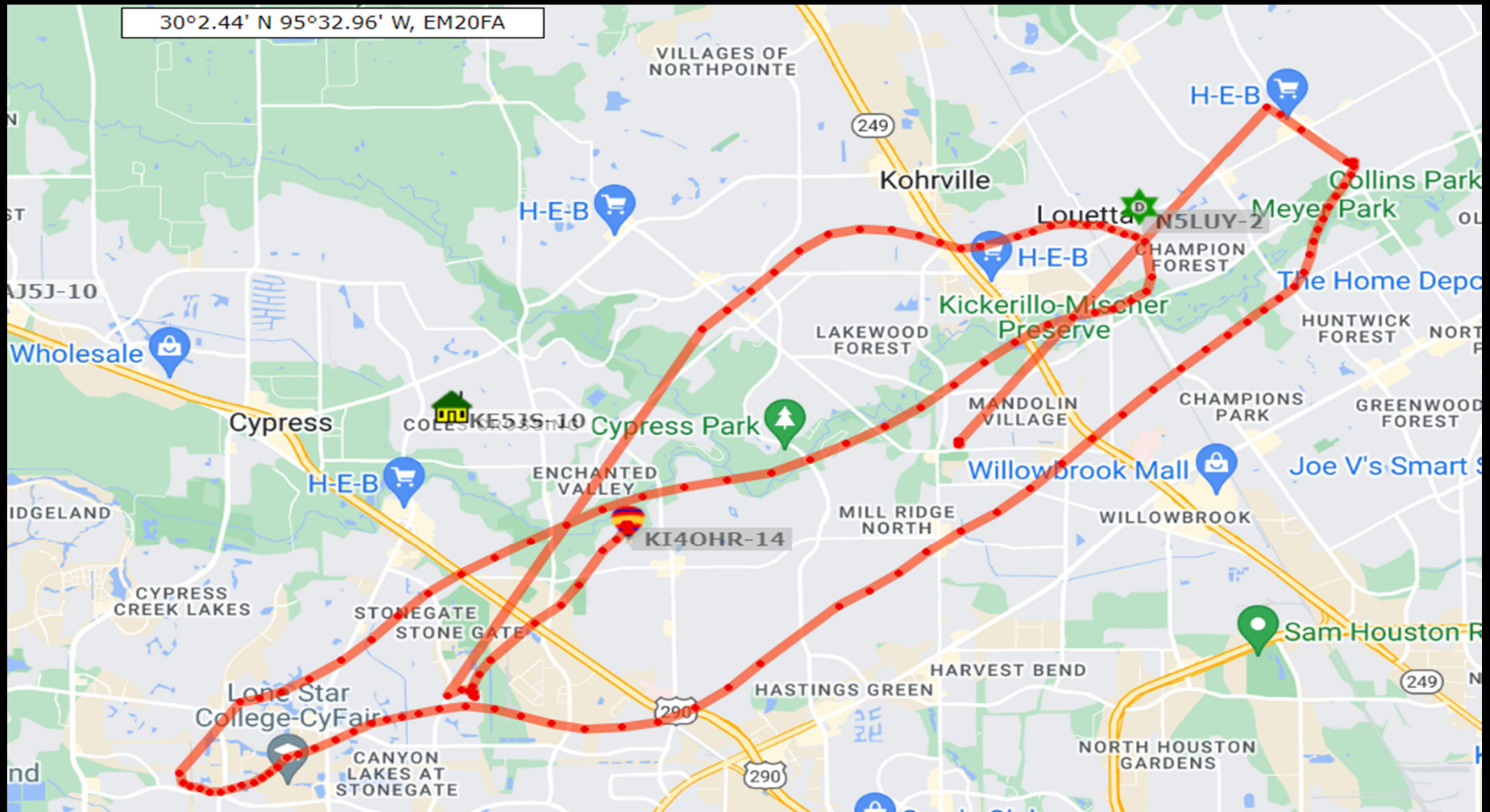


Launched 6/27/23
KI4OHR-14 APRS 144.39

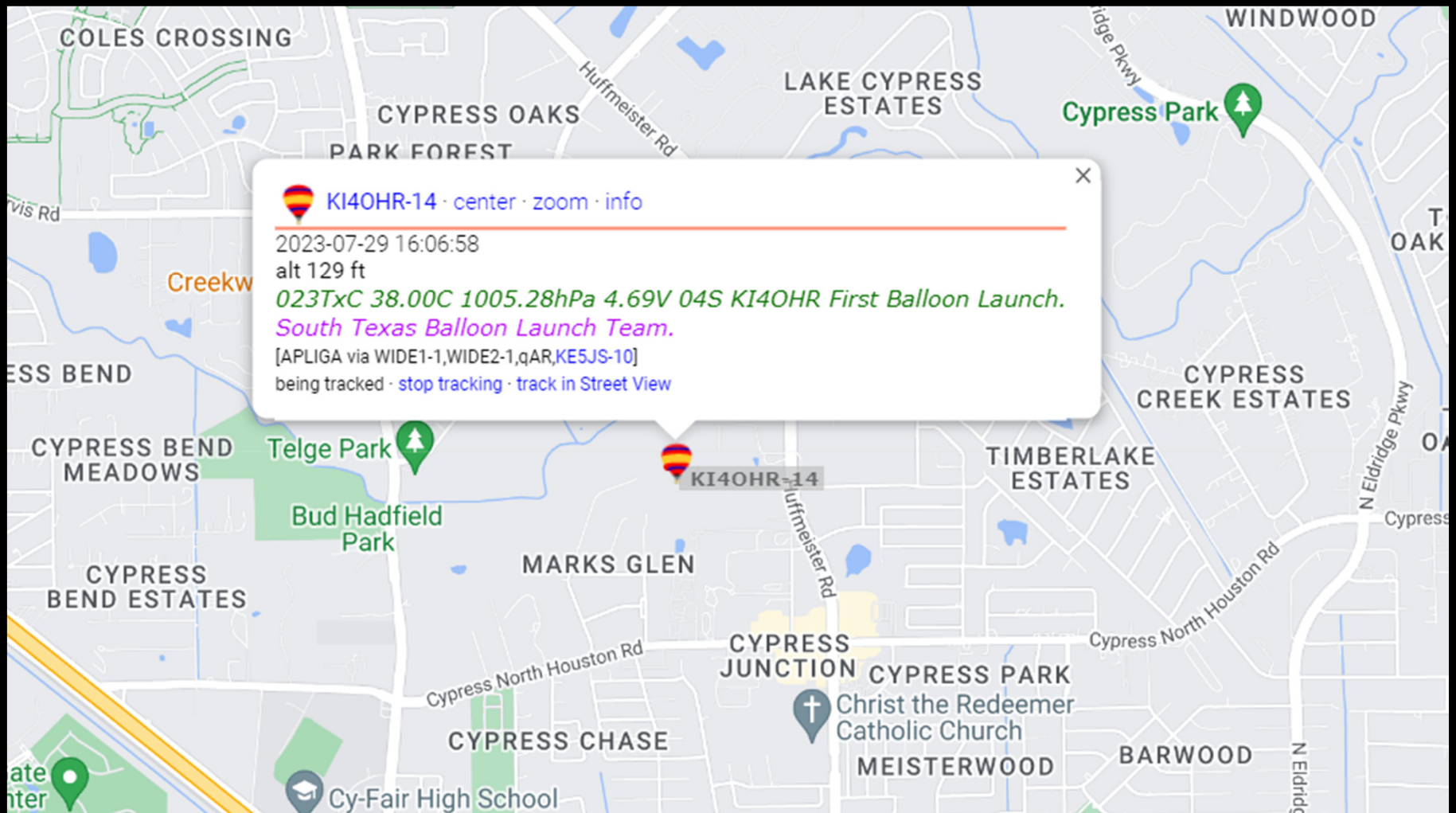


Launched 6/27/23

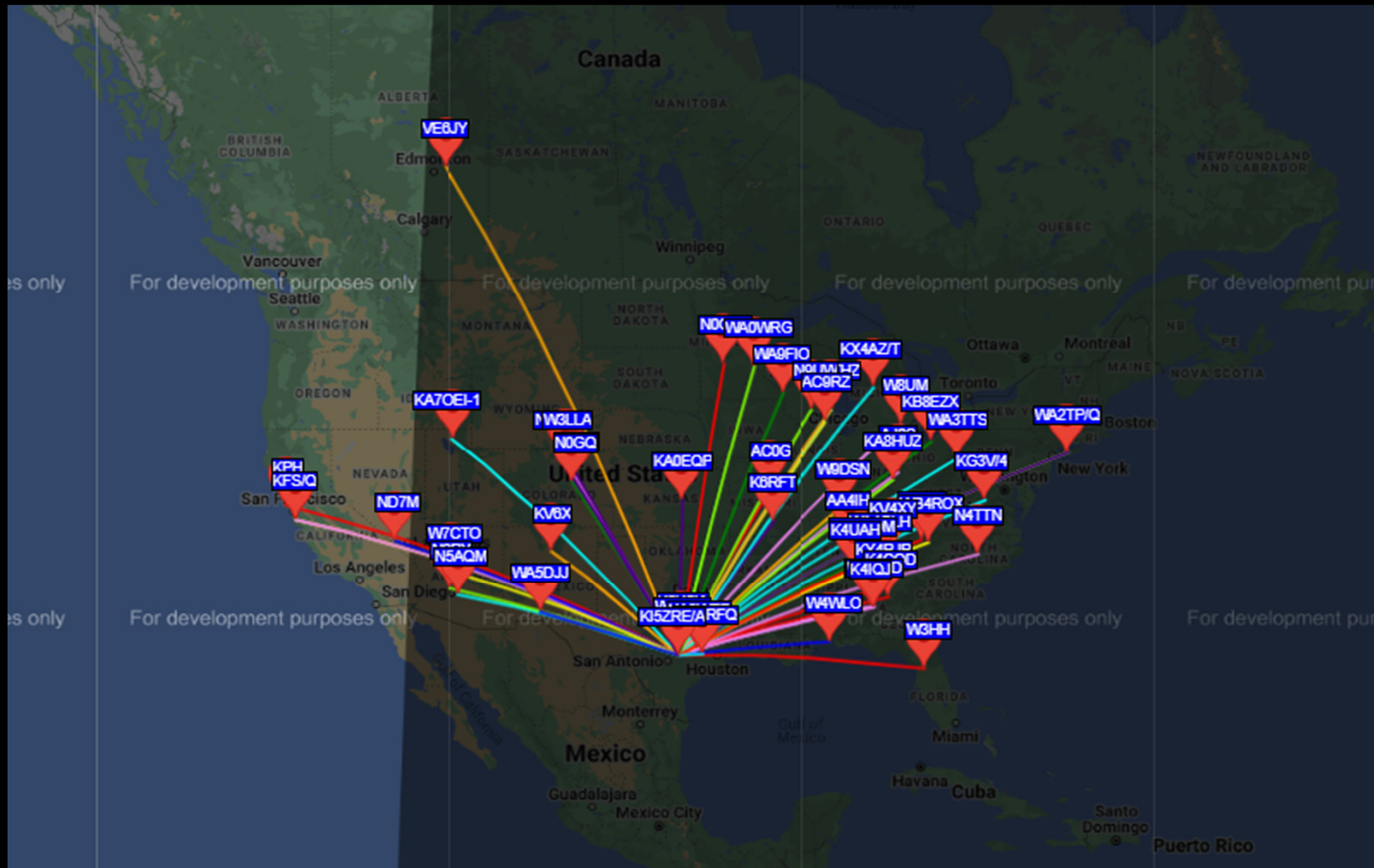
KI4OHR-14 APRS 144.39



Launched 6/27/23 KI4OHR-14 APRS 144.39

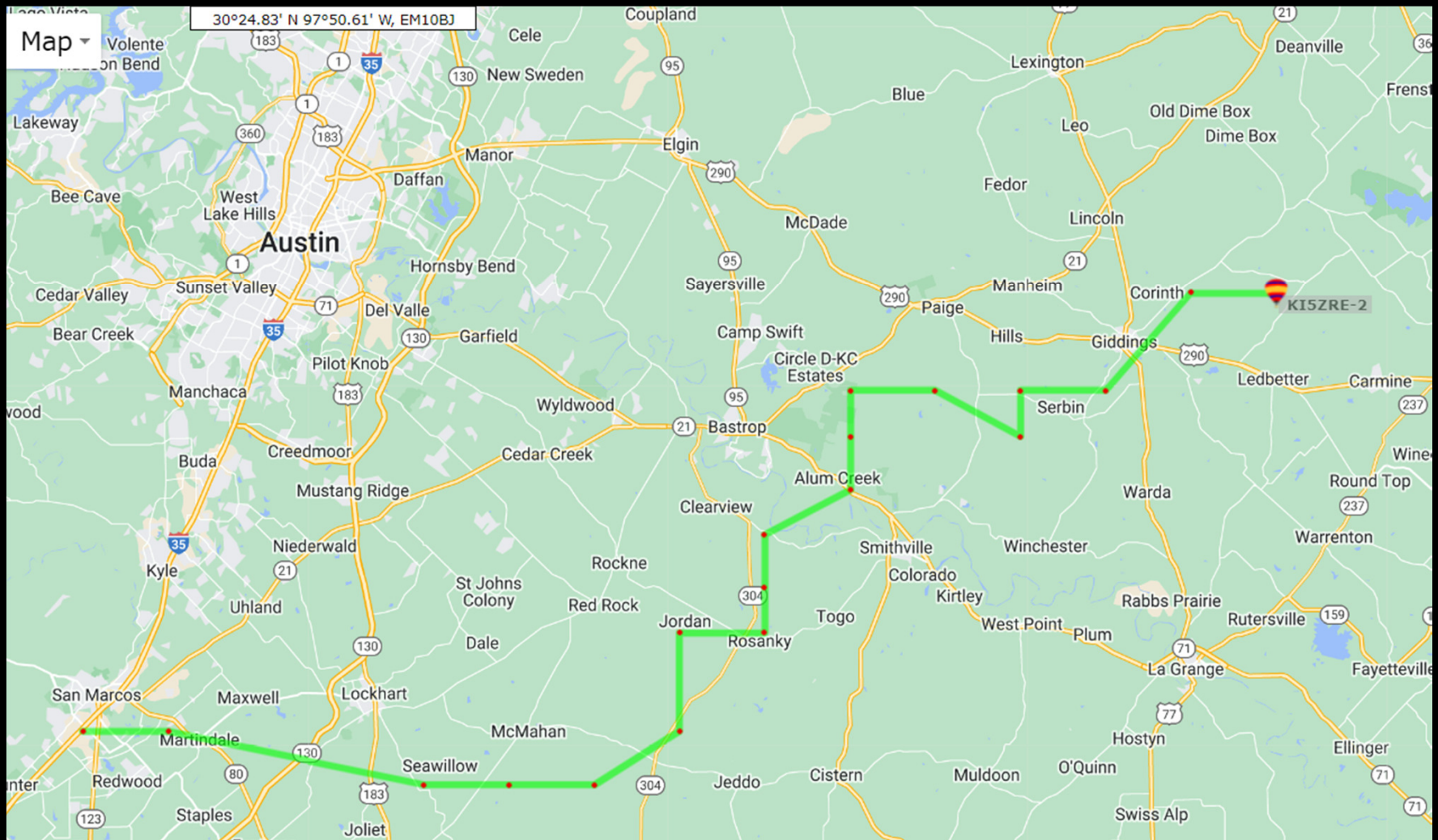


Launched 9/12/23 KI5ZRI/A WSPR

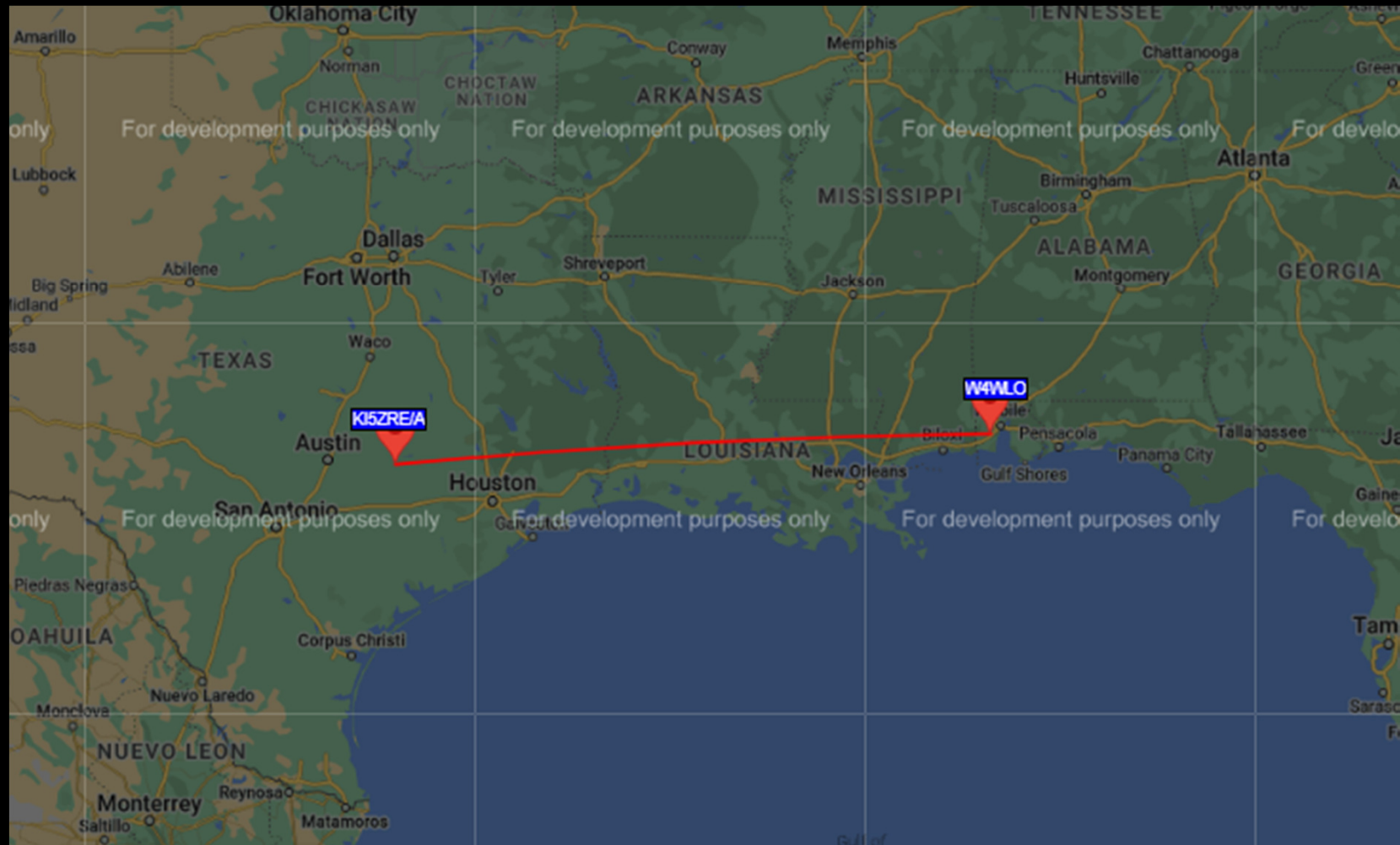


Launched 9/12/23

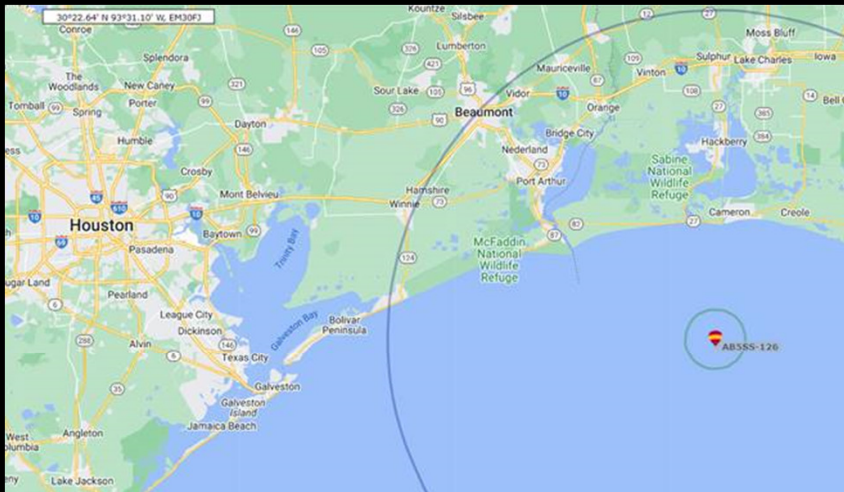
KI5ZRI/A WSPR



Launched 9/12/23 KI5ZRI/A WSPR



Launched 12/19/23 AB5SS BLT-126 WSPR



Callign 29.9605
-95.5722

4FSKTEST
4FSKTEST-V2
9W2BPA-9
AB5SS-126

0.0 ft/min 0.0 mph
RATE WSPR
2,755 ft (2,755 ft)
ALTITUDE (MSL)
2023-12-19 12:36:00
DATETIME (LOCAL)
29.43617, -93.37167
COORDINATES

840 AB5SS El 39h 12 Sats
24 Jan 18 El 39h 17 ZANK
AB5SS BLT-126 South Texas
Balloon Launch Team (Happy
Holidays)
COMMENTS

APRS
MODEMULATION
Received 21h 19m ago via
-WSPRDM

AG6NS-15
AJ4XE
BINAR
BSS46
BSS47

3 days

10km

A screenshot of a WSPR tracking interface. On the left, there is a list of stations with their call signs and signal strength indicators. The station 'AB5SS-126' is selected, and its details are shown in a pop-up window. The details include the station name, coordinates, altitude, and a message from the launch team. On the right, a map shows the location of the station in the Houston area, with a blue circle highlighting the station's location. The map also shows other nearby stations and geographical features.

Contact Details

- Email: walterh@k5wh.net
- BLT reflector <https://groups.io/g/BLT>
- Ham Radio Tech Notes reflector: <https://ham-radio-tech-notes.groups.io/g/main>
- DMR: Amsat-98006 talkgroup
- YSF Fusion: US-Amsat-11689 reflector
- DSTAR: REFSAT, DCSSAT, XRFSAT, XLXSAT, all on module C
- Zoom: Livestream: <http://www.k5wh.net/zoom/>



Any Questions?