GLOBAL SPACE BALLOON CHALLENGE 2015

Stratocaching Flight, Not Rocket Science Association, Prague, Czech Republic

OUR NOMINATION IN CATEGORIES:

BEST PHOTOGRAPH (3 photos uploaded)

BEST INNOVATIVE COMPONENT (Stratocache Superseed)

Time of start: 12/4/2015, 5:31 UTC

Location of start: Meteorological observatory in Praha-Libuš (50.007958 14.447236)

Time of landing: 12/4/2015, 7:46 UTC

Location of landing: near Kojkovičky village (49.582472, 15.449472)

Description and flight details:

Our flight used a very special payload: Stratocache „Superseed“, an innovated version of our previously used „Stratocaches“ in two big Stratocaching events in 2013 and 2014 (see www.stratocaching.com). The basic idea is that the flight module imitating the natural design of maple seed doesn't need a parachute to land safely with its 200 g payload. The ascent brings the static vertical pictures from the in-guilt GoPro camera, the descent shows a turbulent rotation that's quite hypnotic. We believe this module shape inspired by nature can be used in space exploration (e.g. electronic probes on planets with athmosphere) since it's in many ways less problematic than modules with a parachute.

The Stratocache was hosted by an official meteorological balloon with Vaisala probe. The automatic release system disconnected the Stratocache after 60 mins of flight at the altitude approx. 18.100 meters. After 105 mins of flight, we received the final position of the landing Stratocache near Kojkovičky village. The GPS/GSM tracker reported its position very accurately and the module could be very easily found on the field near a forest.

The whole flight was arranged with cooperation of the Czech Hydrometeorological Institute experts and was covered by their permitions (the max. payload limit). We deeply appreciate their help and knowledge.

YouTube video cut: https://www.youtube.com/watch?v=sHJgaAC5Uhs

Competition photos uploaded (all of them taken during the 14/4/2015 flight):

The first picture shows the meteorological balloon with Vaisala probe right after disconnecting of the Stratocache. The picture was appreciated especially by the Hydrometeorological Institute because they can hardly see their balloon from this angle.

1. The second photo shows the blurred skies captured by the rotating camera
2. The third photo is a real abstraction: blurred field, the Stratocache final destination

Most innovative component: Stratocache Superseed

We really think nobody has ever launched a thing like our Stratocache „Superseed“! The components of this innovated module are:

- Pyroshell (not sure if this is the right word:-) on the string that disconnects the Stratocache from the balloon
- Electronic timer
- GPS/GSM tracker Meitrack MT90 with a special heating
- 3 AA batteries
- GoPro camera with original battery

Total weight of the module is 200g. We are still examining this special design of maple seed and would like to cooperate with scientists to develop its features.

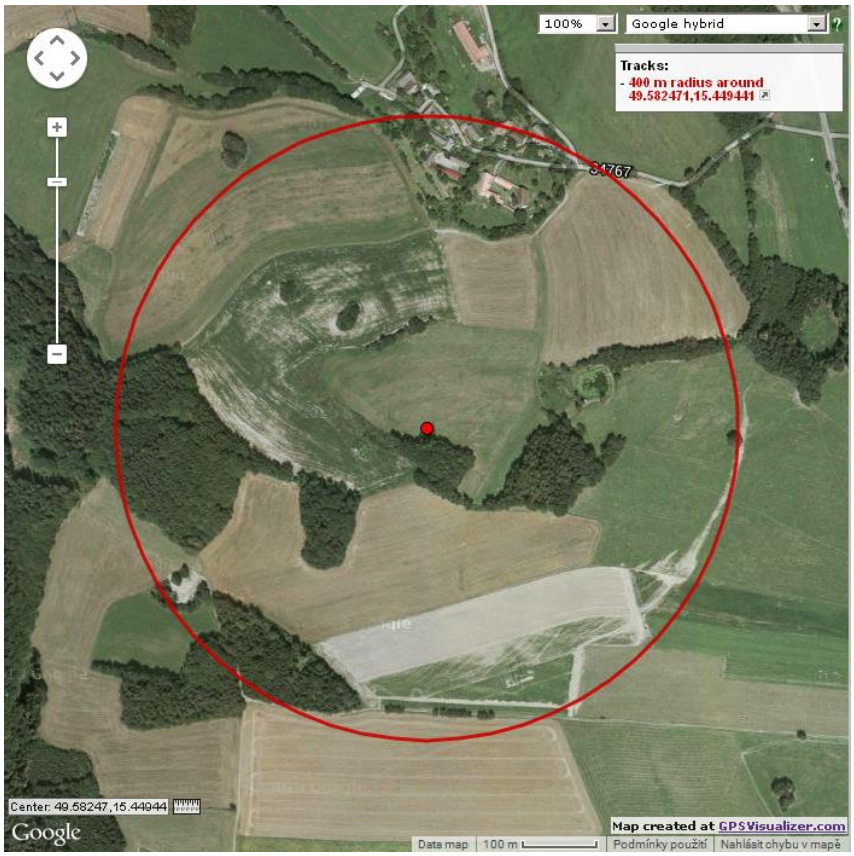
Flight details

We have 2 sources of data – the Vaisala probe gives verified positions and the the flight was also tracked by radioamateurs on the website here:
http://sondetracker.radiosonda.sk/v1/hist.php?hw=J4553657

After 60 minutes of flight, the tratoache left the hosting balloon with the probe, so the reamining data are not important for our project.

The GSM/GPS tracker was autamically turned on after 85 minutes of flight (to save energy and the device) We received 29 text messages that allow us to identify the last part of the independent Stratoache flight.

9	9	49,60461	15,40833	549	99
9	9	49,59636	15,43678	549	99
9	10	49,59466	15,44009	550	100
9	10	49,62632	15,32624	550	100
9	16	49,62505	15,33001	556	106
9	16	49,62345	15,33388	556	106
9	16	49,62185	15,33736	556	106
9	16	49,62049	15,341	556	106
9	17	49,61962	15,34537	557	107
9	17	49,6194	15,35005	557	107
9	17	49,61943	15,3507	557	107
9	17	49,63008	15,31416	557	107
9	17	49,60335	15,41223	557	107
9	17	49,60209	15,41609	557	107
9	17	49,60112	15,42043	557	107
9	18	49,60026	15,42464	558	108
9	18	49,59928	15,42894	558	108
9	18	49,59793	15,43289	558	108
9	19	49,59298	15,44205	559	109
9	26	49,58243	15,44957	566	116
9	36	49,58246	15,44951	576	126
9	46	49,58248	15,44951	586	136
9	49	49,58243	15,44941	589	139
9	56	49,58243	15,44941	596	146
10	6	49,58247	15,44948	606	156
10	16	49,58244	15,44948	616	166
10	27	49,58245	15,44949	627	177
10	37	49,58245	15,44955	637	187
10	47	49,58247	15,44944	647	197



Vaisala probe landing

After finding our Stratoache, we also searched for the hosting Vaisala balloon remnants and the probe. We found it according to the predictrions of the Czech Hydrometeorological Institute and radioamatours several kilometers far from our Stratocache, near Senožaty town.

Vaisala probe official positioning data are attached in the separate sheet (Source: Czech Hydrometeorological Institute)