Great Plains Super Launch

Edge of Space Sciences

July 2010

Rev: Basic

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GPSL Quick Reference Sheet

Trip Out
Time Leaving Limon on Wednesday: 08:00 AM
Mileage from Limon to Hutchinson: 379 miles
Address/Lat Long of Days Inn Hutchinson:
1420 N. Lorraine, Hutchinson, Ks 67501 (620) 665-3700
Lat/Long: N38.06990 deg., W97.90357 deg. (or N38 deg 4.194 min., W97 deg 54.21 min)

Frequencies:
Breakfast Rendezvous Repeater Frequency
- 146.64 MHz Denver Relay League
- 448.450 MHz Pikes Peak FM Association

Enroute:
- Simplex – 146.55 MHz
- APRS – 144.39 MHz (with –6 SSID please)

Frequency	Tone	Location
147.12	None	Located in Elmer, KS. About 5 miles south of Hutch **Primary talk-in/call-in freq for GPSL.**
146.67	Unk	Partridge, KS. About 10 mi. SW of Hutch.
146.94	None	Wichita, KS. About 42 miles SE of Hutch
145.13	None	Newton, KS. About 32 miles east of Hutch

EOSS Flight and Track and Recovery (finalized Friday night before the flight):
- Launch Site and T&R Simplex - 146.55 MHz
- Area Repeater (we'll choose one of the several near Hutchinson)
- EOSS Balloon APRS - 144.34 MHz
- Balloon Beacon and Cutdown - 145.600 MHz

Grid
Days Inn: Lat/Long: N38.06990 deg., W97.79036 deg. (or N38 deg 4.194 min., W97 deg 54.21 min.)
Grid Coordinates: XX, YY

Launch Site
Location:
Lat/Long and Grid

Predicted Landing Location
Friday Night: Grid: X_____, Y_____, Lat/Long_____

Saturday Morning: Grid: X_____, Y_____, Lat/Long_____

EOSS at GPSL 2010

Our Host

Zack Clobes, WØZC of Project Traveler is our host. (785 230-6866h). Zack's wife's name is Crys.

- Project Traveler is a Hutchinson-based amateur high altitude balloon group. They have been flying since 1999, but have not be active in the last couple of years. Zack was in Topeka last summer for GPSL and did an excellent job as the launch coordinator on Saturday.

http://projecttraveler.org/traveler/

Location

The technical session will be held at the Kansas Cosmosphere and Space Center, which is located at

1100 North Plum
Hutchinson, Kansas 67501
(800)397-0330

GPSL Website

http://nearspaceventures.com/gpsl2009/
(The URL hasn't changed from last year.)

Attendees from EOSS

Benji Campbell*, WØCBH
John Dinneen*, K5JFD
Doug Gentges*, N0IX
Helen Gentges
Emma and Amanda Gentges, Doug & Helen's children
Marty Griffin*, WAØGEH
Sharon Griffin
Nick Hanks*, NØLP
Chris Krengel*, KBØYRZ
Mike Manes*, W5VSI
Steve Meer*, KØSCC
Parker Meer*, Steve's son
Mike Morgan*, N0MPM
Larry Noble*, NØNDM
Mike Pappas*, W9CN
Teresa Pappas
Miles Pappas*, KDØJIT,, Mike & Theresa's son
Rick von Glahn*, NØKKZ
Rob Wright*, KC0UUO

* Attending tech session of Friday.

Lodging

This is our motel for GPSL this year.

Days Inn Hutchinson
1420 N. Lorraine
Hutchinson, Ks 67501
(620) 665-3700

The hotel has high speed Internet access and offers a complimentary hot breakfast.

Lat/Long: N38.06990 deg., W97. 90357 deg. (or N38 deg 4.194 min., W97 deg 54.21 min.)

Directions and Breakfast on Wednesday

Breakfast

We'll gather in Limon at the McDonalds for breakfast and to form our "convoy" on July 21st. Please be in your car and ready to roll at 8:00 AM. Also please have your gas tank full so we can get a ways into Kansas before our first gas/potty stop.

On to Topeka

From Limon, CO it's 379 miles to the Days Inn in Hutchinson. We'll be using a scenic cutoff from I-70 down to Hutchinson (same route we used in 2006). The mileage is slightly less than on the Interstates, but the time's about the same.

Our Route: I-70 east into Kansas to I-70 exit 219 (Rt. 14 Ellsworth). Then south on Rt. 14, to Rt. 96, east though Nickerson, and then southeast on Rt. 96 to 11th Ave, in Hutchinson. Then east on 11th to Lorraine and then north to the Days Inn.

Driving Time:

- 379 mi @ 66 mph = 5.75 hours (accounting for a speed limit in Colorado of 75 mph and Kansas of 70 mph on the interstate and 60 mph on Rt 14 & 96.).
- Lunch and gas 1.5 hour.
- One additional gas/rest stop at 0.5 hr.
- Total: 5.75 + 1.5 + 0.5 = 7.75 hr
- For 08:00 AM departure from Limon, we should arrive at the motel at about 5:00 PM (Central DST).

Time Zone Changes/Sunrise/Sunset

- On the way to Hutchinson the time zone changes from Mountain Time to Central Time in Kansas at the Sherman-Thomas county line on I-70. That's at 101 degrees 23.472 minutes West longitude (101.39120 W).
- Sun Times for 24 July for Hutchinson, KS (a bit more data than we'll need, but cool):
  - Begin civil twilight: 5:51 a.m.
  - Sunrise: 6:22 a.m.
  - Sun transit: 1:38 p.m. (Time the sun is at its highest point in the sky)
  - Sunset: 8:53 p.m.
  - End civil twilight: 9:18 p.m.

Tactical Call Signs

Tactical	Call Sign	Group
Alpha	WAØGEH (AEØSS on Saturday)	Marty, Sharon and John
Bravo	KCØUUO	Rob, Benji, Chris & Larry
Charlie	W9CN	Mike, Teresa & Miles
Delta	NØIX	Doug & ?
Echo	NØKKZ	Rick and Mike (W5VSI)
Foxtrot	NØMPM	Mike (NØMPM) & ?
Golf	KØSCC (AEØSS on Thursday and Sunday)	Steve, Parker & Nick

Mission Coordinator and Leads/Top Level Responsibilities

Mission Coordinator – N. Hanks (Mission Plan (this booklet) & host coordination)
Payload Preparation – M. Manes (Mike says they're ready to go!)
Flight Path Prediction – R. von Glahn
Launch Lead – L. Noble (Balloon fill & flight string setup; balloon, fill equipment, helium & tarps transportation)
Flight String Lead – M. Manes (Configure string on launch day, checkout modules, brief payload handlers and prepare flight string for launch, assist with launch, secure flight string at landing site & prepare for transportation back to Denver.)
Safety Lead/Checklist – M. Pappas
T & R Lead – M. Griffin (Alpha & preflight eyeball-net NCS.)

Frequencies

Breakfast Rendezvous Repeater and Simplex Frequencies

- 146.64 MHz Denver Relay League
- 448.450 MHz Pikes Peak FM Association
- 146.55 MHz simplex

Enroute:

- Simplex – 146.55 MHz
- APRS – 144.39 MHz (with –6 SSID please)

Hutchinson, KS Area Repeaters

Repeater Listing

Frequency	Tone	Location
147.12	None	Located in Elmer, KS. About 5 miles south of Hutch **Primary talk-in/call-in freq for GPSL.**
146.67	Unk	Partridge, KS. About 10 mi. SW of Hutch.
146.94	None	Wichita, KS. About 42 miles SE of Hutch
145.13	None	Newton, KS. About 32 miles east of Hutch
This is a good listing of Kansas repeaters http://www.ksrepeater.com/. WAØGEH will choose some repeaters for the T&R when we have the flight path prediction and announce the choices at the Friday eyeball net. Marty put together a map of the locations of likely repeaters. They're here.		

EOSS Flight and Track and Recovery (finalized Friday night before the flight):

- Launch Site and T&R Simplex - 146.55 MHz
- Area Repeater (we'll choose one of the several near Topeka at the Friday "net.")
- EOSS Balloon APRS - 144.34 MHz
- Balloon Beacon and Cutdown - 145.600 MHz

A total GPSL frequency plan is included at the end of the booklet. Frequency Plan for GPSL Flights

Mobile HF

Last year and in 2008 three of our vehicles were HF equipped. On the way to Kansas they made contacts on both 40 meters and 20 meters. We'll put an email out to the GPSL reflector "advertizing" the frequencies we'd be using and the times our stations would be listening.

For those who have mobile HF capability or are thinking of installing it, GPSL provides a great opportunity to work HF in a friendly, helpful environment both before we leave and en-route. As you are well aware HF can be a valuable addition to EOSS track and recovery operations on the Colorado plains during our flights, and you'll find it's great fun. Last year our starting frequencies ended up on some standing nets, so this year let's try 7.234 and 14.275 MHz for starters. That info will go out in an email to the GPSL groups on Tuesday, the 20th. The email will mention that we'll be listening at :30 past the hour as we drive.

Agenda

Wednesday, 21 July Initial Gathering and Check-In		
Time	**Event**	**Location**
8:00 am	Departure from McDonalds	Limon, CO
6:30 pm (guess)	Dinner in Hutchinson	TBD

Thursday, 22 July Visit to Salt Mine and Cosmosphere		
Time	**Event/Presentation**	**Location**
As Desired	Breakfast	Motel
9:00 AM	Leave motel for Kansas Underground Salt Mine	Direction below 3504 East Ave G Hutchinson, KS 67501 (620) 662-1425
Around noon	Lunch	Group Choice after tour
About 1:00	Visit to Kansas Cosmosphere and Space Center	1100 North Plum Hutchinson, Kansas 67501 800.397.0330 Directions below
6:30 PM	Dinner (This is a GPSL function.)	Ken's Pizza 901 East 30th Avenue Hutchinson, KS 67502-4224 (620) 669-9309Direction below

Directions to Kansas Underground Salt Mine from Days Inn (about 3.8 miles)

- Turn left out of motel parking lot and go south on Lorraine
- After 0.7 mile turn left onto E. 4th Ave, then immediately turn right (south) onto SR-61
- Turn left (east) on E. Avenue G
- In two miles turn into the salt mine parking lot.

Directions to Cosmosphere from salt mine (4.6 miles)

- Go west on E. Avenue G back to SR-61
- Turn right and go north to E. 4th Ave.
- Turn left on E. 4th Ave. and go west 1.1 miles to Plum St.
- Turn right and go north 0.6 mile to 11th Ave.
- Turn right and then left into the parking lot located west of the Cosmosphere.

Directions to Ken's Pizza from Days Inn

- Go north on Lorraine St. 1.1 miles to E. 30th Ave.
- Turn left and go west 0.5 miles on 30th Ave. to N. Severance St.
- Ken's Pizza is on the southeast corner of 30th and Severance.

Friday, 23 July Tech Sessions, Friday Night "Net," Dinner		
Time	**Event/Presentation**	**Location**
8:30 am	Doors open at Cosmosphere to presenters and organizers only.	Cosmosphere Meeting Room Directions below
9:00 am	Doors open to general public. Breakfast and coffee available.	Meeting Room
9:15 am	Greetings and Introductions	
9:30 am	Tech Session: "20 Years of High Altitude Ballooning in Colorado" by Nick Hanks, EOSS	Meeting Room
10:00 am	Tech Session: "High Resolution Balloon Borne Spectrometer" by Jeff Daily from Taylor University	Meeting Room
10:45 am	Break	Meeting Room
11:00 am	Tech Session: "ARBONET: Progress of Experiments in Communications and Control" by Michael Willett and Doug Loughmiller from ARBONET	Meeting Room
11:45 am	Lunch: Catered from the best BBQ joint in the midwest (www.roysbbq.com)	Meeting Room
12;30 pm	Tech Session: "Pre-burst Balloon Chaos by Howard Brooks from DePauw University	Meeting Room
1:00 pm	Tech Session: "Cosmic Rays" by Paul Verhage from NearSys	Meeting Room
1:30 pm	"Tracking Transmitters and Long Duration Flight" by Bill Brown	
2:15 pm	Break	Meeting Room
2:30 pm	Round Table: "Forming a National Balloon Organization" moderated by Zack Clobes from Project: Traveler	
3:45 pm	Tech Session: "Using UI-View for Balloons" by Brian Short from ????	Meeting Room
4:30 pm	Weather and Pre-flight Briefing	Meeting Room
After Wx briefing	EOSS Eyeball Pre-flight Net Marty Griffin	Meeting Room
6:30 pm	GPSL Group Dinner at Anchor Inn	Directions below 128 South Main Street, Hutchinson, KS - (620) 669-0311.
After dinner	EOSS Equipment Setup & Checkout, Computer Setup	Days Inn Parking Lot

Directions to Cosmosphere from Days Inn

- Turn left out of Days Inn and go south on Lorraine St. 0.3 miles to E. 11th Ave.
- Turn right and go west 0.8 miles to the Cosmosphere parking lot on the right. (You'll see the parking lot before you see the Cosmosphere building.)
- If you cross Plum St. you went too far.

Directions to Anchor Inn from Days Inn

- Turn left (south) out of parking lot and go south on Lorraine
- Turn right (west) onto E. 4th Ave
- Go 1.5 miles and turn left onto Main St.
- Go 0.5 miles to Anchor Inn on left

Saturday, 24 July Mass Ascent and Flight		
Time	**Event**	**Location**
6:30am	Helium pickup, NØNDM, Launch Coordinator	
7:00 am	Launch prep and fill. We're going to delay our launch a bit so we can take a look at the other groups' payloads, launch prep and release techniques.	Hutchinson or McPherson Airport
7:30 am	Launch. There are thirteen groups flying balloons: Near Space Ventures, Dryden Engineering, EOSS, ROBOMO (2), ARBONET, WB8ELK, Nick Stich, ORB, BASE - Depauw (2), Traveler, Nearsys	Hutchinson or McPherson Airport
?	Track and recovery	TBD
As desired	Lunch	Local Restaurants
TBD	How Did It Go? (Informal review of the morning's flights by each group) 5-10 min. per group, Marty Griffin for EOSS.)	TBD
6:30 PM	Dinner	The Airport Steak House at the Hutchinson airport

Sunday, 25uly Alternate Launch Date and/or Return to Denver		
Time	**Event**	**Location**
6:30am	Launch Site (TBA)	Flight String Prep & Fill
7:30am	Launch Site (TBA)	Balloon Launch
1:00pm?	Local Restaurant	Lunch
OR		
7:00 am	Local Restaurant	Breakfast
8:00 am	Leave for Denver	

Be sure to wear your EOSS hat on Saturday.

Video

There will be a web site showing live video from the tech session provided by our host, WØZC. No info yet on where to find it on the web. Also Bill Brown will be sending video to his streaming video site as he did last year. It's at www.batc.tv. Click on Members Streams, then select: WB8ELK. He'll cover both the tech session and launch and recovery.

Meals

Breakfasts

Free Continental breakfast available at Days Inn.

Lunch on Friday (Tech Session)

For lunch, snacks, and admission to the Cosmosphere its $20 per person. We're planning for fifteen folks for the tech session. Those folks have an asterisk by their name in the list of attendees.

Dinners

Wednesday night – our call. Need to be aware there are twenty of us so we may need to consider going to two groups and/or splitting up in one place .

Thursday, Friday and Saturday evenings -- locations and directions in Agenda above..

Grid

We'll use the Days Inn parking lot as the grid reference point. It's at N38.06990 deg., W97.79036 deg. (or N38 deg 4.194 min., W97 deg 54.21 min.). The Alpha will assign the grid coordinates of the Days Inn during our pre-flight briefing on Friday afternoon and in concert with NØKKZ's flight prediction.

GPSL Flight Predictions on the Web

http://nearspaceventures.com/w3Baltrak/CurrMissionPlot.pl

Launch Sites

Which launch location we'll use will be decided at the end of the tech session on Friday. Here are the two that have currently been identified. Maps and directions are below.

A. Hutchinson Airport

N38 deg 3.8 min., W 97 deg 51.9 min. (38.064,-97.865) @ 1542 ft.

B. McPherson Airport

39º 27.68, W095º 46.76 (N38.359, W97.686)@ 15310 ft.

Map to Hutchinson Airport

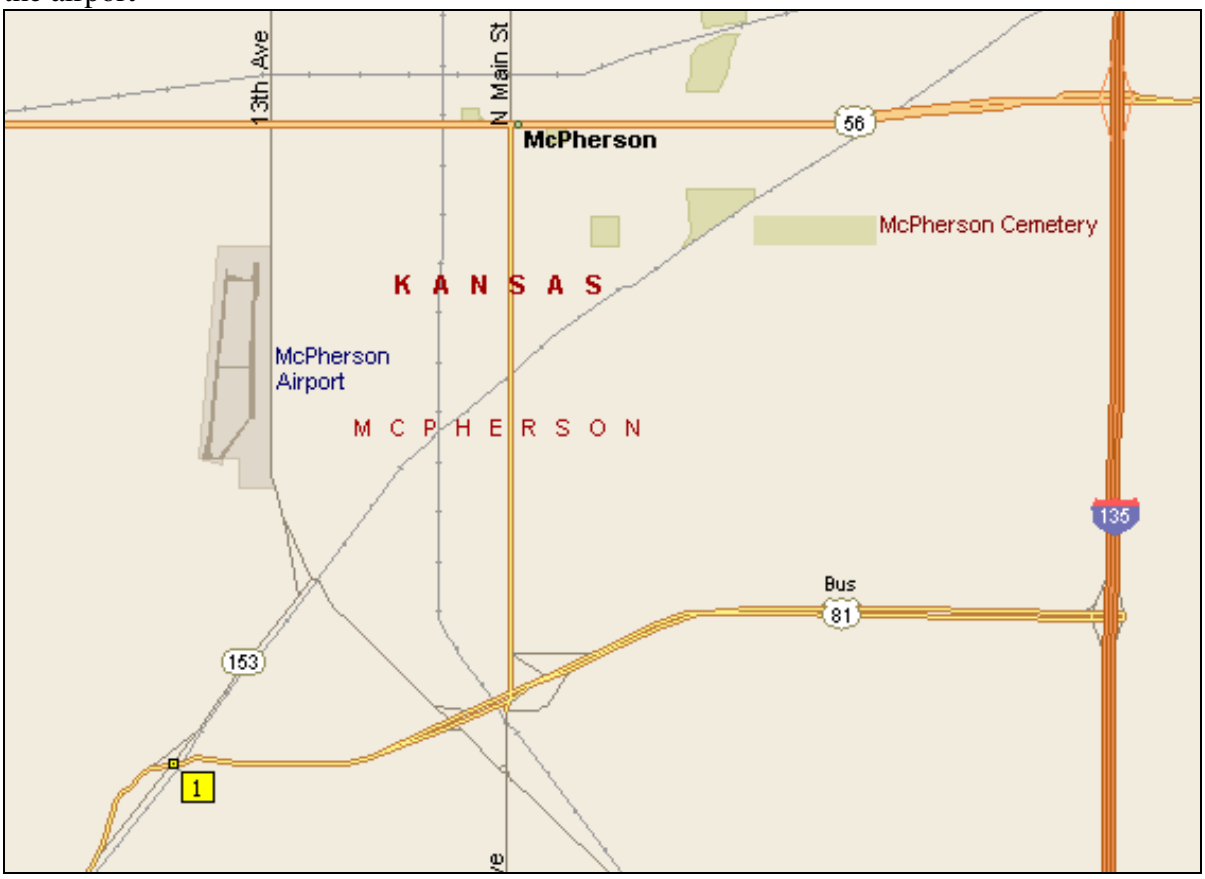
Directions*:*

East end of 11th Ave. Our hotel is just north of 11th Ave

Map to McPherson Airport

Directions:

From the hotel on Lorraine St. to 17th Ave. Turn left onto Rt. 61. Go northeast on Rt. 61 about 21 miles. Turn left onto Rt. 153, then left after 0.75 mile onto 13th Ave. and go north about a mile to the airport



About Hutchinson

Hutchinson is the largest city in and the county seat of Reno County, Kansas. It's located 39 miles northwest of Wichita, on the Arkansas River (yea, the same one that flows through Pueblo and Buena Vista). Hutchinson's nickname is *The Salt City* but is referred to locally as *Hutch*. The population was 40,787 at the 2000 census. Every September Hutchinson hosts the Kansas State Fair, in March it hosts the National Junior College Athletic Association (NJCAA) Basketball Tournament, and in July the United States Specialty Sports Association's boy's baseball 16 & Under Baseball State Tournament and the girls Fast Pitch 18 & Under World Series.

Climate

There's no historical NOAA weather data for Hutchinson, but there is for Wichita. It averages 3.5 inches of rain in July and gets rain about ten times in July. The average July high is around 89 degrees, and the average low is 67 degrees. Like Topeka last year and Topeka last year, it's going to be humid.

History

The city of Hutchinson was founded in the year 1871, when Indian Agent C.C. Hutchinson contracted with the Santa Fe Railway to make a town at the railroad's crossing over the Arkansas River. The community was known to be called "Temperance City." Hutchinson was incorporated on August 15, 1872.

On January 17, 2001, 143 million cubic feet (4,000,000 m^3) of compressed natural gas leaked from the nearby Yaggy storage field. It sank underground, then rose to the surface through old brine, or salt wells making around 15 gas blowholes. An explosion in the downtown area at 10:45 a.m. destroyed 2 businesses and damaged 26 others. An explosion the next day in a mobile-home park took the lives of two people. The Kansas National Guard was called in to help evacuate parts of the city because of the gas leaks, and a team of specialists looked over all the city for leaks after the event. These events were broadcast on nationally televised news stations across the country.[5][6] [7]

Hutchinson is home to the Prairie Dunes Country Club, a golf course frequently ranked among the best golf courses in the U.S., and has hosted several United States Golf Association national championship tournaments.

The Cosmosphere

The Kansas Cosmosphere and Space Center in Hutchinson, Kansas, grew from a planetarium established on the State Fairgrounds in 1962. The 105,000 square foot facility now houses the largest collection of Russian space artifacts outside of Moscow, and the second largest collection of space artifacts in the world, second only to the National Air and Space Museum.

The Cosmosphere has four venues - The Hall of Space Museum, The Justice Planetarium, The Carey Imax Dome Theatre, and Dr. Goddard's Lab, which is a live science presentation. The Cosmosphere also hosts a series of camps for children as young as those going into second grade, up to a camp designed for grandparents to attend with their grandchildren.

The only Smithsonian affiliated museum in Kansas, the Cosmosphere was voted one of the eight wonders of Kansas in a 2008 national poll.

Included in the Cosmosphere's collection are an SR-71 Blackbird, the Liberty Bell 7 spacecraft from Mercury 4, and the Odyssey command module from Apollo 13, as well as authentic Redstone and Titan II launch vehicles used in the Mercury and Gemini programs. Restored

World War II V-1 and V-2 rockets are also on display. A prized item in the collection is a moon rock from the Apollo 11 mission, the first mission to reach the moon.

The Cosmosphere is the only museum in the world that has both an authentic restored V-1 flying bomb and an authentic restored V-2 rocket. It is also the only museum outside of Russia that has an authentic, flown Vostok capsule.

An interesting note about the Cosmosphere's collection is that nearly all of the vehicles, rockets, spacecraft, and spacesuits that you will see are either the real thing or something called a "Flight Ready Backup". A flight ready backup is identical, in all respects, to the item actually flown. If a problem is detected in a spacecraft, rocket, or suit before it is flown, the flight ready backup fills in on the mission for the damaged item. The only replicated items in the Cosmosphere are the model of "Glamorous Glennis," the Bell X-1 flown by Chuck Yeager, and the life-sized space shuttle replica that greets visitors.

The Cosmosphere museum begins with the earliest experiments in rocketry during the World War II era, explores through the "Space Race" and Cold War, and continues through the modern times with the Space Shuttle and International Space Station. The Cosmosphere is one of only three museums to display flown craft from Mercury, Gemini and Apollo missions.

Ref.: http://en.wikipedia.org/wiki/Kansas_Cosmosphere_and_Space_Center

About Kansas

- Population: 2,802,134 (2008 US Census Estimate); 33rd largest state
- Attained Statehood: January 29, 1861 (34th state)
- Origin of Name: Named after the Kansa tribe, who inhabited the area in earlier times. The tribe's name is often said to mean "people of the wind" or "people of the south wind", although this was probably not the term's original meaning.
- Nickname: Sunflower State
- Slogan: “There's No Place Like Home” (of the ruby slippers in The Wizard of Oz) and “Kansas: As big as you think”
- Capital: Topeka
- Largest City: Wichita

Geography

Kansas is bordered by Nebraska on the north; Missouri on the east; Oklahoma on the south; and Colorado on the west. The state is divided up into 105 counties with 628 cities. It is located equidistant from the Pacific and the Atlantic oceans. The geographic center of the 48 contiguous states is located in Smith County near Lebanon, Kansas. Lebanon is located north of Russell, KS about 12 miles from the Nebraska state line. The geodetic center of North America was located in Osborne County until 1983. This spot was used until that date as the central reference point for all maps of North America produced by the U.S. government. The geographic center of Kansas is located in Barton County.

The western two thirds of the state, lying in the great central plain of the United States, has a generally flat or undulating surface. However, the eastern third has many hills and forests. The land displays a gradual slope up from east to west; its altitude above the sea ranges from 684 ft (208 m) along the Verdigris River at Coffeyville in Montgomery County, to 4,039 ft (1,231 m) at Mount Sunflower, one half mile from the Colorado border, in Wallace County. It is a popular

belief that Kansas is the flattest state in the nation, reinforced by a well known 2003 study stating that Kansas was indeed "flatter than a pancake."[12] This has since been debunked, with most scientists ranking Kansas somewhere between 20th and 30th flattest state, depending on measurement method

The highest point in Kansas is Mount Sunflower, 4,039 ft. Located in Sherman County, it is less than 1/2 mile from the Colorado state border and close to the lowest point in Colorado. The state of Kansas gradually increases in elevation from the east to the west. As such, "Mount" Sunflower, while the highest point in the state in terms of elevation, is indistinguishable from the surrounding terrain. (On our trip to Topeka, when we enter Kansas, we'll be in Sherman County. Mount Sunflower is 21 south of I-70 at the KS border.) The lowest point in Kansas is the Verdigris River, 679 ft. at Coffeyville in Montgomery County, located on the Oklahoma state line in southeast Kansas.

Mount Sunflower, Highest Point in Kansas

Notable Facts about Kansas Include:

- Kansas comprises 105 counties.
- The four largest urban areas are, in descending order, Wichita, Overland Park, Kansas City, and Topeka.
- The first European to set foot in present-day Kansas was Francisco Vásquez de Coronado, who explored the area in 1541. In 1803, most of modern Kansas was secured by the United States as part of the Louisiana Purchase. Southwest Kansas, however, was still a part of Spain, Mexico, and the Republic of Texas until the conclusion of the Mexican-American War in 1848. From 1812 to 1821, Kansas was part of the Missouri Territory.
- The Santa Fe Trail traversed Kansas from 1821 to 1880, transporting manufactured goods from Missouri and silver and furs from Santa Fe, New Mexico. Wagon ruts from the trail are still visible in the prairie today.
- Area (Land and Water): 82,277 square miles; 15th largest state

- Some famous People from Missouri
  Amelia Earhart (aviation pioneer)
  Carrie Nation (temperance activist)
  Former president Dwight D. Eisenhower
  Bob Dole and Alf Landon (former presidential candidates)
  NASA astronauts Ronald Evans, Joe Engle, and Steve Hawley
  Kansas was home to industrial and intellectual pioneers: Walter Chrysler of automotive fame, Clyde Cessna and Lloyd Stearman (aviation pioneers), Jack Kilby (microchip inventor, The Nobel Prize Winner in Physics 2000), George Washington Carver (educator and scientist), Earl W. Sutherland, Jr. (The Nobel Prize Winner in Physiology or Medicine 1971), and Vernon L. Smith (The Nobel Prize Winner in Economics 2002)
  General Richard Myers (Chairman, Joint Chiefs of Staff, 2001-05)
  Robert Gates (United States Secretary of Defense December 2006 - Present)
  Annette Bening (actress)
  Dennis Hopper (actor)
  Buster Keaton (actor)
  Joe Walsh (of The Eagles and Extra Class Amateur WB6ACU)
  Melissa Etheridge (musician)
  Kirstie Alley (actress)
  Charlie Parker (Jazz musician)
  Campbell Brown (network journalist)
  Athletes: Wilt Chamberlain, George Brett, Barry Sanders, Gale Sayers, and Jim Ryun.

Population

The center of population of Kansas is located in Chase County. As of 2004, the population included 149,800 foreign-born (5.5% of the state population). The largest reported ancestries in the state are: German (25.9%), Irish (11.5%), English (10.8%), American (8.8%), French (3.1%), and Swedish (2.4%). People of German ancestry are especially strong in the northwest, while those of British ancestry and descendants of white Americans from other states are especially strong in the southeast. Mexicans are present in the southwest and make up nearly half the population in certain counties. Many African Americans in Kansas are descended from the Exodusters, newly freed blacks who fled the South for land in Kansas following the Civil War.

Railroads and Rivers

As we travel east towards Limon from the Denver metro area, I-70 runs next to the Union Pacific (UP) railroad tracks on the north side of the road outside Denver and on south side of the road after crossing I-70 between Bennett and Strasburg. After Limon the UP tracks head east-south-east while we go almost due east. From Limon we'll see the old Rock Island tracks on the north side of the road all the way to Colby, KS. Those tracks are now used by the Kyle Railroad. The Kyle RR operates primarily in NE and north central Kansas going as far east as Salina.

When we head southeast out Colby, KS we'll pickup a spur of the UP that runs to Oakley where it joins the main line coming east from Colorado, the same line that left I-70 at Limon. The UP tracks will stay on the north side of I-70 until just east of Ogallah where there's not only an overpass over the tracks, but a bend in the road to accommodate the tracks and the highway. Interesting to note that the railroad tracks in western Kansas follow US 40, or is it the other way

around? I-70 of course was built to roughly parallel US 40. Once we get past Russell the tracks run to the south then return about Abilene and run roughly parallel to I-70 until Kansas City. From Russell on it's difficult to see the tracks as they run further from the road, but the ever present white grain elevators mark the roadbed.

The Smokey Hill River will be south of I-70 as we pass Oakley, KS, although too far south to see from I-70. The Smoky Hill is named after the Kansas geographic region of the same name, which is the origin of the name of the major arterial road in Denver. We'll across the river just east of Junction City, KS. (Junction City is named for the confluence of the Smokey Hill and Republican Rives). The Republican River starts in Colorado in Yuma County and flows into Nebraska before entering Kansas south of Grand Island, NE. After the confluence the rivers are called the Kansas River. We'll be close to the Kansas River in Topeka. It flows through the northern part of the city.

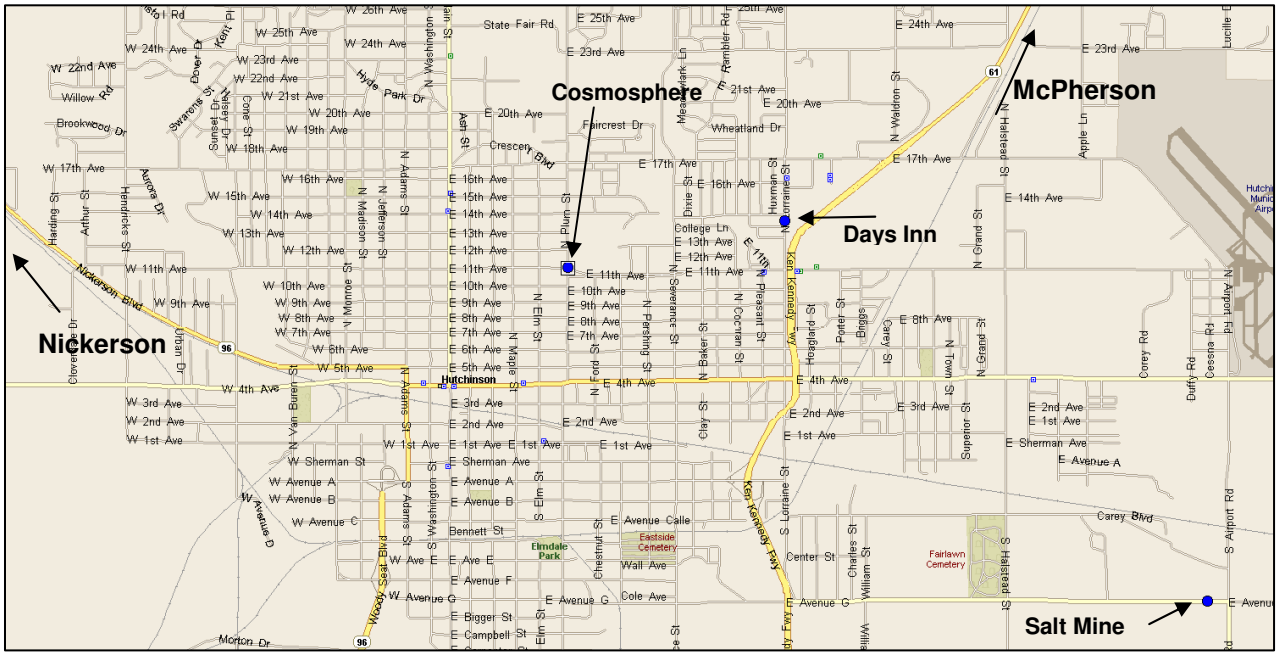
Previous EOSS GPSL Roundup

All balloons were 1200 gram, except in 2003 which was a 1500 gram.

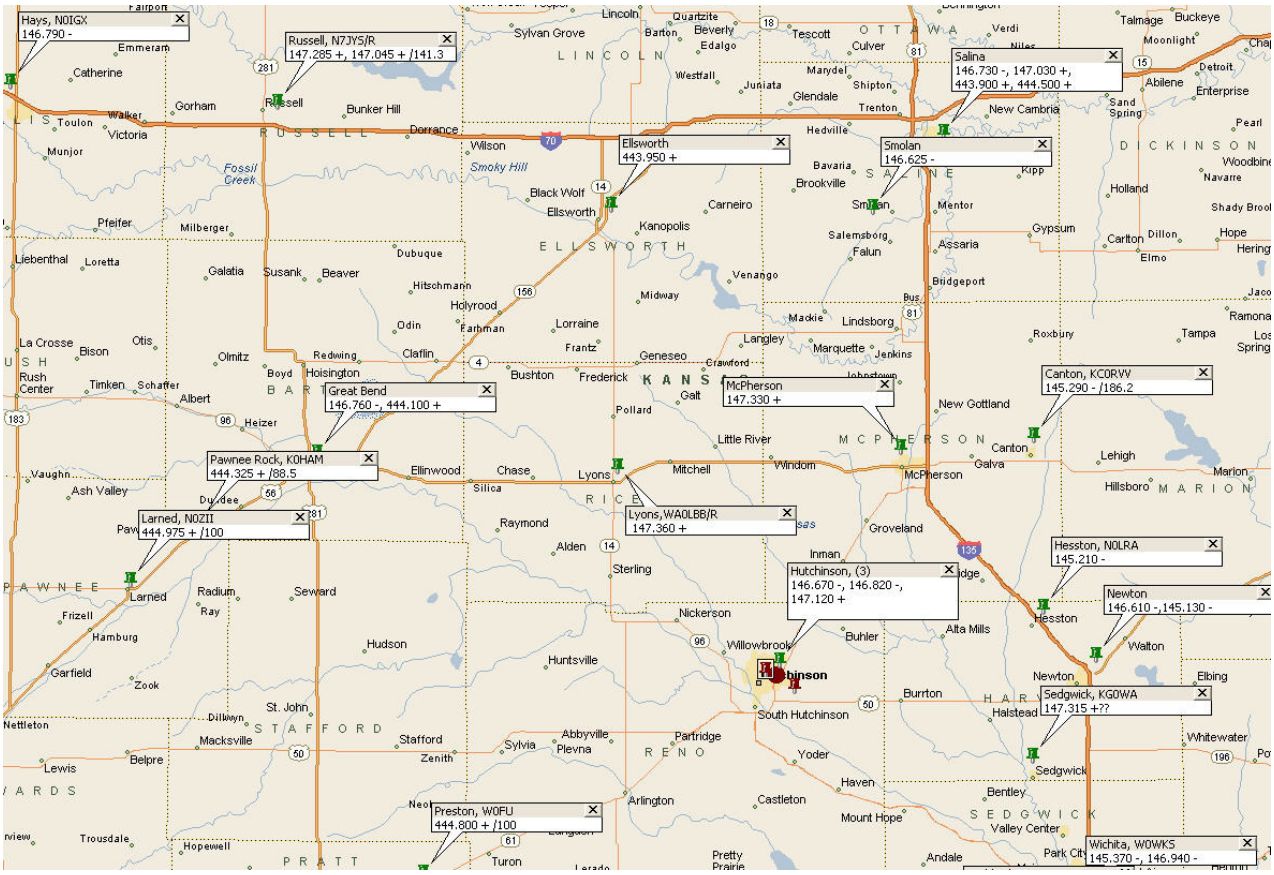
Date/ EOSS#	Conference/Launch Locations	EOSS Burst Alt. (ft.)	EOSS Flt. Range/ Bearing	EOSS Payload String
2001	Manhattan/Manhattan, KS	EOSS didn't attend.		
2002/ 58	Manhattan/Herington, KS	87,504	20/244	Unk
2003/ 67	Boulder/Deer Trail, CO	46,593 (leak?)	19/115	Unk
2004/ 80	Hutchinson/McPherson, KS	88,999	30/135	DF/Cutdown, Despun ATV, AE0SS-11 Module
2005/ 92	Omaha, NE/Treynor, IA	87,900	40/100	DF/Cutdown, Despun ATV, AE0SS-11 Module
2006 111	Hutchinson/Lyons, KS	90,016	12/23	DF/Cutdown, Despun ATV, Single CU Demosat, Crossband Repeater, AE0SS-11 Module
2007 118	Grand Island/Doniphan, NE	90,850	31/232	DF/Cutdown, K0SCC ZigBee, N0KKZ/K0ANI DVR, BUNS Camera, Crossband Repeater, AE0SS-11 Module
2008/ 131	Liberty/Liberty, MO	88,760	29/163	DF/Cutdown, K0SCC ZigBee, ATV Lite, SamCam, Crossband Repeater, AE0SS-11 Module
2009/- 144	Topeka, KS	86,792	58/150	DF/Cutdown, K0SCC ZigBee, ATV Lite, SamCam, AE0SS-11 Module

Maps

Hutchinson

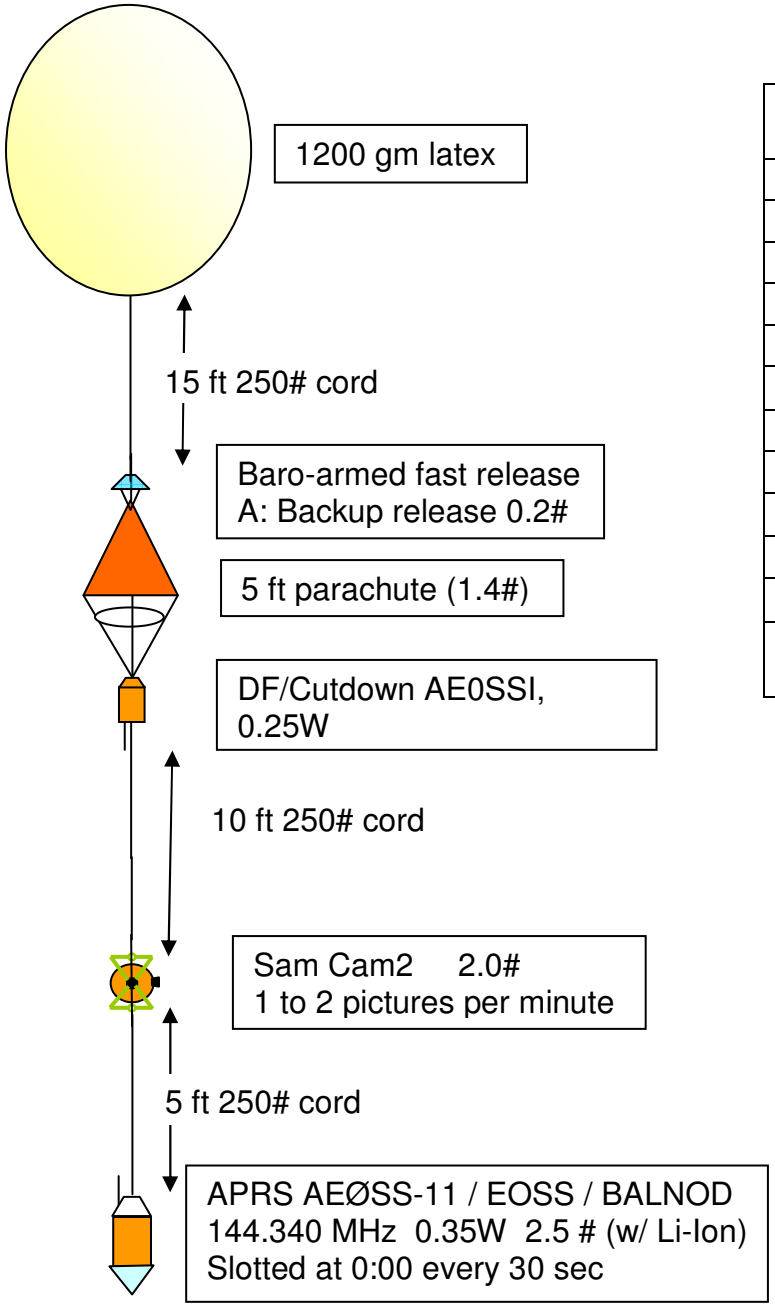


Kansas Repeater Locations



Payload Plan (EOSS-154)

Revision: 23 May 2010



Item	Weight, lb
DF Cutter	0.90
Sam Cam2	2.00
APRS Module	2.50
Payload Wt.	4.95
Lite Quick Release	0.20
Parachute	1.40
Neck load	6.55
Balloon	2.66
Gross wt	9.21
Gross Lift Factor	125%
Gross Lift	11.51
Neck Lift [(GLF x gross wt.) - Balloon	8.85

Frequency Plan for GPSL Flights

The following slots are for 144.34 only. There will not be assignments of slots for.144.39 frequency unless there is overwhelming response otherwise.

EOSS - :00 to :05 seconds.
ROBOMO - :06 to :11 seconds
WB8ELK - :12 to :17 seconds
ORB - :18 to :23 and :48 to :53
Traveler - :24 to :29. Also has a second transmitter on frequency, not slotted, but only transmitting about every 90 seconds.
Nearsys - :30 to :35

Grid & Launch Location Data for TrackPoint

Below are some inputs for TrackPoint to make adding the launch locations and the grid reference point easier.

Here are the launch points. To enter them, on TrackPoint go to Setup>Lnch/Pred/Gird, then click on the little blue square to the right of the Launch Site drop down menu. A list will open in Notepad. Copy the two lines below and paste them to the bottom of the list. Then Save the Notepad file. When you get back to Denver, repeat the process, only delete the two lines and Save the file. In both cases you'll need to restart TrackPoint to see the changes.

Hutch A/P,N,38,3.83,W,97,51.95,1542
McPherson A/P,N38,21.62,W,97,41.19,1310

To put the new grid reference location, in TrackPoint open Setup>Lnch/Pred/Grid, then click on the little blue square on the right side between the words "Choice" and "Grid." When the list opens in Notepad paste in the line below and then Save notepad. This does not require a restart. Select "Hutch" as your grid reference point and set the grid to 0, 0 to watch the East miles (X) and the North miles (Y) decrease as we drive to Hutch. On the way back enter your QTH as the grid reference point and watch the X and Y decrease on the way home.

Hutch,N,38,4.19,W,97,54.21