

Long Flights Over the Appalachian Ridges

Chicagoland Glider Council

21 February 2015

Mike Higgins “Whiskey Mike”



Today's task...

Map/Description of Appalachian Ridge System

Ridge & Wave WX Forecasting

Ridge Flying

Wave Flying

Common 1000k+ Appalachian Flights

Long Duration/Distance Flight Considerations

Cold Weather Flight Considerations

23 April 2014 Flight

Questions/Discussion...

Pushing the envelope at Fairfield

(Baude Litt)

LBL



WM (Mike Higgins)



LBL

OnLine Contest ... *has changed* Appalachian Soaring

www.onlinecontest.org/olc-2.0/gliding/daily.html?st=olc&rt=olc&df=2014-04-23&sp=2014&c=C6&sc=									
<div><div><div>OLC</div><div>Innovations for soaring</div></div><div>Segelflugszene</div><div>Gliding</div><div>ParaHangGliding</div><div>ModelGliding</div></div> <div><div>Help</div><div>English</div><div>login</div><div>Affiliate Member</div></div>									
Daily Score OLC 2014									
North America / Apr 23, 2014									
2014-04-23 [60]									
Search Filter									
60 items found, displaying 1									
Points	name	km	fai-km	km/h	Takeoff location	Club	Aircraft	Start	End
1,592.39	Brian Collins (US / R2: NJ NY-S PA-E)	1,609.58	48.8	129.31	Ridge Soaring (US / 2)	Ridge Soaring Irregu...	PIK 20 B	11:14	23:45
1,384.33	Michael Higgins (US / R4: DE DC MD VA WV)	1,341.51	511.9	128.03	Mid Atlantic ... (US / 2)	M-ASA Mid-Atlantic S...	Discus 2	11:27	23:04
921.76	Marian Nowak (CA / ON/Q)	959.53	58.4	107.84	Ridge Soaring (US / 2)	Toronto Soaring Club	SZD 55	11:38	20:43
892.99	Helmut Bauer (DE / R2: NJ NY-S PA-E)	1,016.78	123.2	149.48	Ridge Soaring (US / 2)	Ridge Soaring Irregu...	Ventus 2cM/1...	10:56	18:39
850.87	Ryszard Krolkowski (US / R2: NJ NY-S PA-E)	874.35	91.9	90.94	Blairtown (US / 2)	Aero Club Albatross	SZD 55	13:29	23:16
789.26	John Seymour (US / R2: NJ NY-S PA-E)	871.98	92.6	134.45	Eagle PA (US / 2)	Ridge Soaring Irregu...	ASG 29	12:42	19:20
768.81	Ron Schwartz (US /)	472.70	38.8	51.18	Blairtown (US / 2)	126 Association	Schweizer, S...	10:58	21:03
626.55	David Pixton (US / R4: DE DC MD VA WV)	701.05	44.1	127.18	Ridge Soaring (US / 2)	M-ASA Mid-Atlantic S...	ASW 27	11:15	17:31
583.40	Doug Haluza (US / R2: NJ NY-S PA-E)	601.45	56.5	80.14	Ridge Soaring (US / 2)	Ridge Soaring Irregu...	Janus C FG	11:42	19:58
469.91	Gabriel Duford (CA / ON/Q)	548.78	19.0	98.13	Ridge Soaring (US / 2)	Association de Vol a...	HPH 304S Sha...	14:23	20:15
314.52	Frank Paynter (US / R6: IN KY MI OH)	307.66	211.6	76.98	Perry SC (US / 5)	Caesar Creek Soaring	Ventus 2c/18...	16:36	21:22
312.54	Pierre Gavillet (CA / ON/Q)	357.98	25.6	83.04	Ridge Soaring (US / 2)	Montreal Soaring Cou...	LAK 17/18m	13:04	18:08
311.36	Ken Sorenson (US / R10: AR KS LA MO-W NE OK)	308.41	207.0	75.53	Perry SC (US / 5)	Soaring Club of Hous...	Ventus 2cxa ...	16:56	21:31
309.90	Keith Essex (US / R8: AK ID MT OR WA)	286.74	221.8	71.21	Minden-Tahoe (US / 11)	Alaska Mountain Soar	Arcus M	19:53	00:12
308.10	Shack Roberts (US / R10: AR KS LA MO-W NE OK)	304.01	208.8	74.38	Perry SC (US / 5)	Soaring Club of Hous...	JS 1 Revelat...	17:01	21:28
306.02	Sean Franke (US / R12: CA-S)	251.85	180.6	58.31	Perry SC (US / 5)	Warner Springs Glide...	LS 1 f	16:01	21:05
305.42	Sean Fidler (US / R6: IN KY MI OH)	301.07	207.9	75.57	Perry SC (US / 5)	Ionia Non Club	ASG 29/18m	17:05	21:20
304.48	Werner Ruegger (CH / R5: AL FL GA MS NC SC TN)	289.02	193.7	79.33	Perry SC (US / 5)	Eagleville TN	ASW 27	17:36	21:27
303.94	Baudouin Litt (BE / R4: DE DC MD VA WV)	271.20	190.2	75.11	Perry SC (US / 5)	M-ASA Mid-Atlantic S...	LS 8	17:16	21:25
297.83	Sam Zimmerman (US / R5: AL FL GA MS NC SC TN)	299.07	204.3	89.62	Perry SC (US / 5)	Carolina Soaring Ass...	ASH 31/21m	17:47	21:21
295.51	Dave Nadler (US / R1: CT ME MA NH RI VT)	293.13	204.9	86.16	Perry SC (US / 5)	GBSC Boston	Antares 20m	17:43	21:31
287.29	Tim Welles (US / R3: NY-N PA-W)	276.99	206.7	72.05	Perry SC (US / 5)	Harris Hill Soaring ...	Ventus 2cT/1...	17:06	21:23
285.49	Robin Clark (US / R5: AL FL GA MS NC SC TN)	260.90	186.6	78.14	Perry SC (US / 5)	North Florida Soarin...	LS 6	16:58	21:22
285.11	Jim Frantz (US / R4: DE DC MD VA WV)	253.00	183.1	75.95	Perry SC (US / 5)	Blue Ridge Soaring S...	Discus 2	17:35	21:45
283.30	Steve Nichols (US / R10: AR KS LA MO-W NE OK)	337.32	37.1	114.39	GHSA Glidepor... (US / 10)	Greater Houston Soar...	JS 1 C Revel...	17:23	23:16
		265.34	184.8	90.10	Perry SC (US / 5)	SOSA Gliding Club	ASW 27	17:27	21:23

Appalachian Ridge System

“the whole thing”

● Fairfield

A topographic map of the eastern United States, showing the Appalachian Ridge System. The map uses a color gradient where green represents lower elevations and brown/purple represents higher elevations. Several yellow lines are drawn across the map, highlighting the mountain ranges. A dashed yellow line runs along the western edge of the ridge system. The location of Fairfield is marked with a black dot and labeled. The Chesapeake Bay and the Atlantic Ocean are visible on the right side of the map.

Appalachian Ridge System

Overall size
of task area

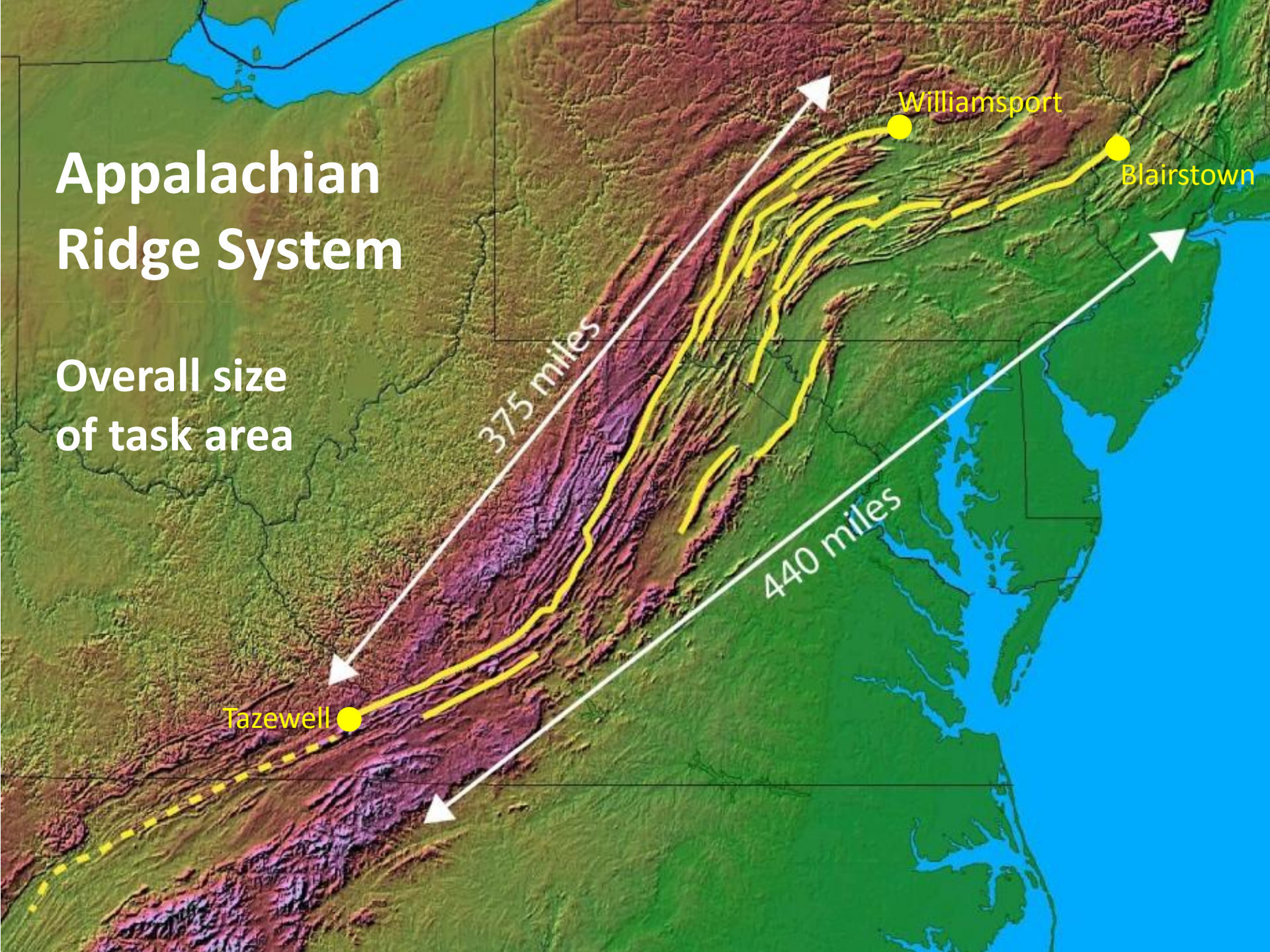
Tazewell

Williamsport

Blairstown

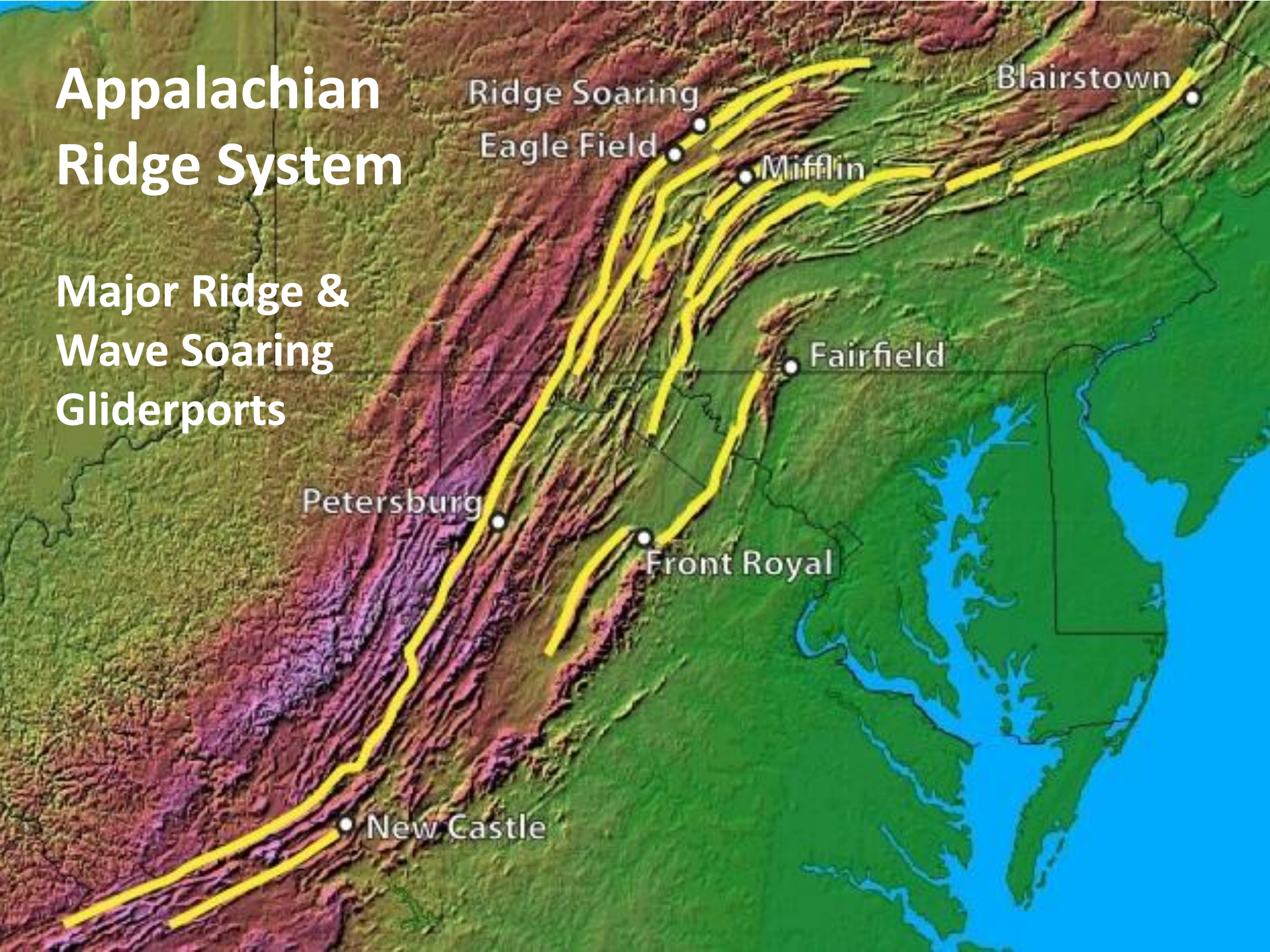
375 miles

440 miles

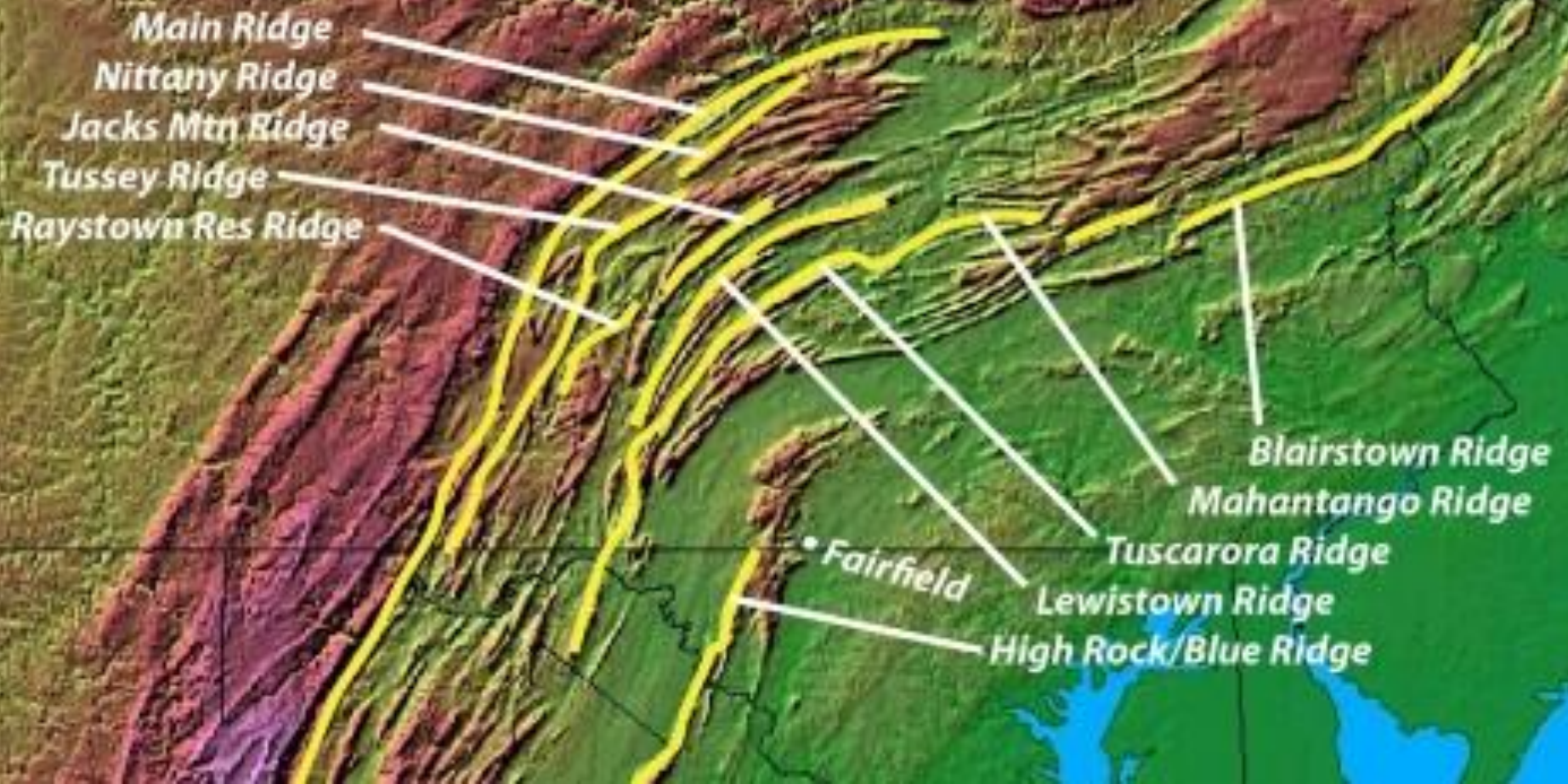


Appalachian Ridge System

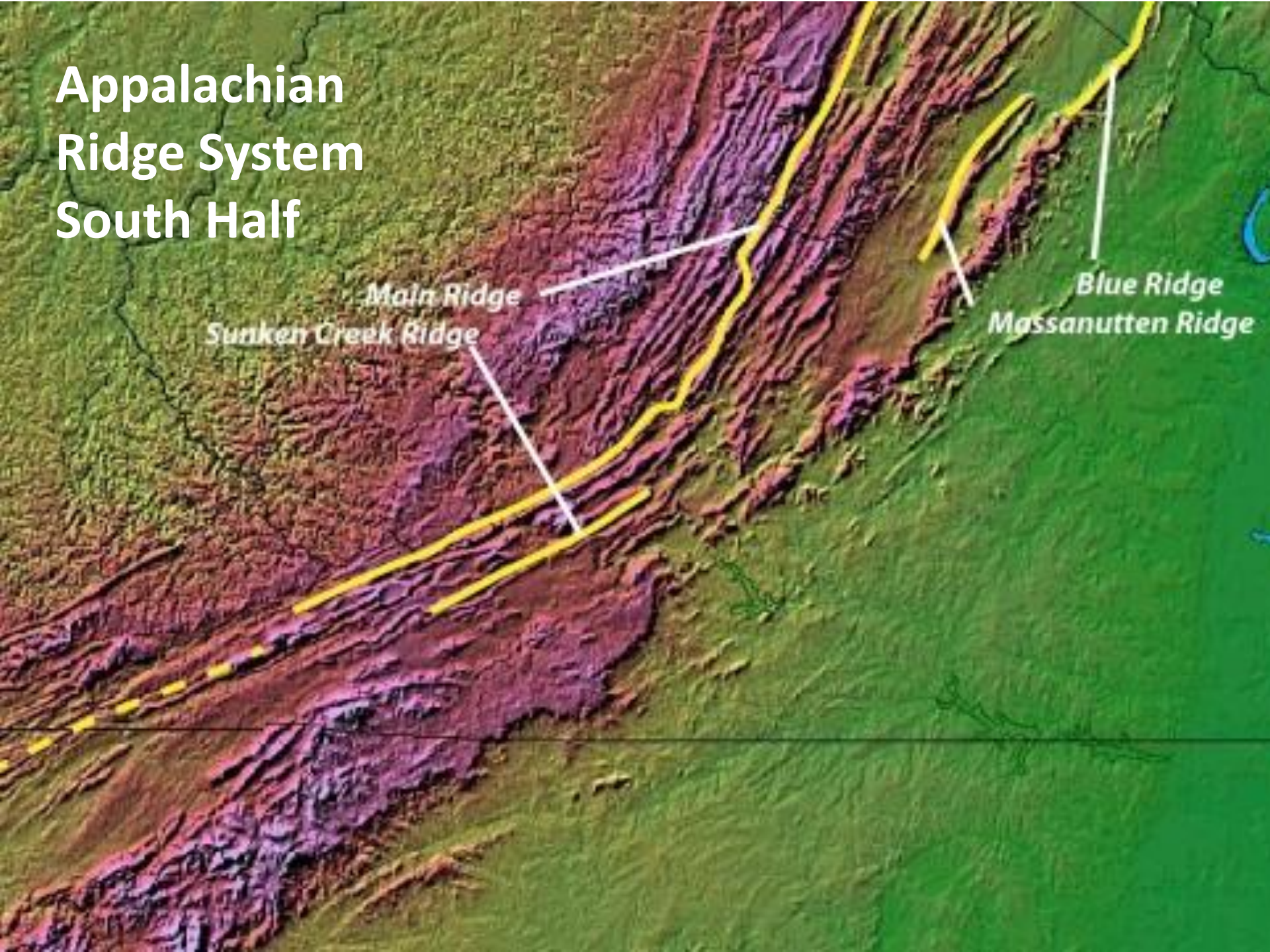
Major Ridge & Wave Soaring Gliderports



Appalachian Ridge System North Half



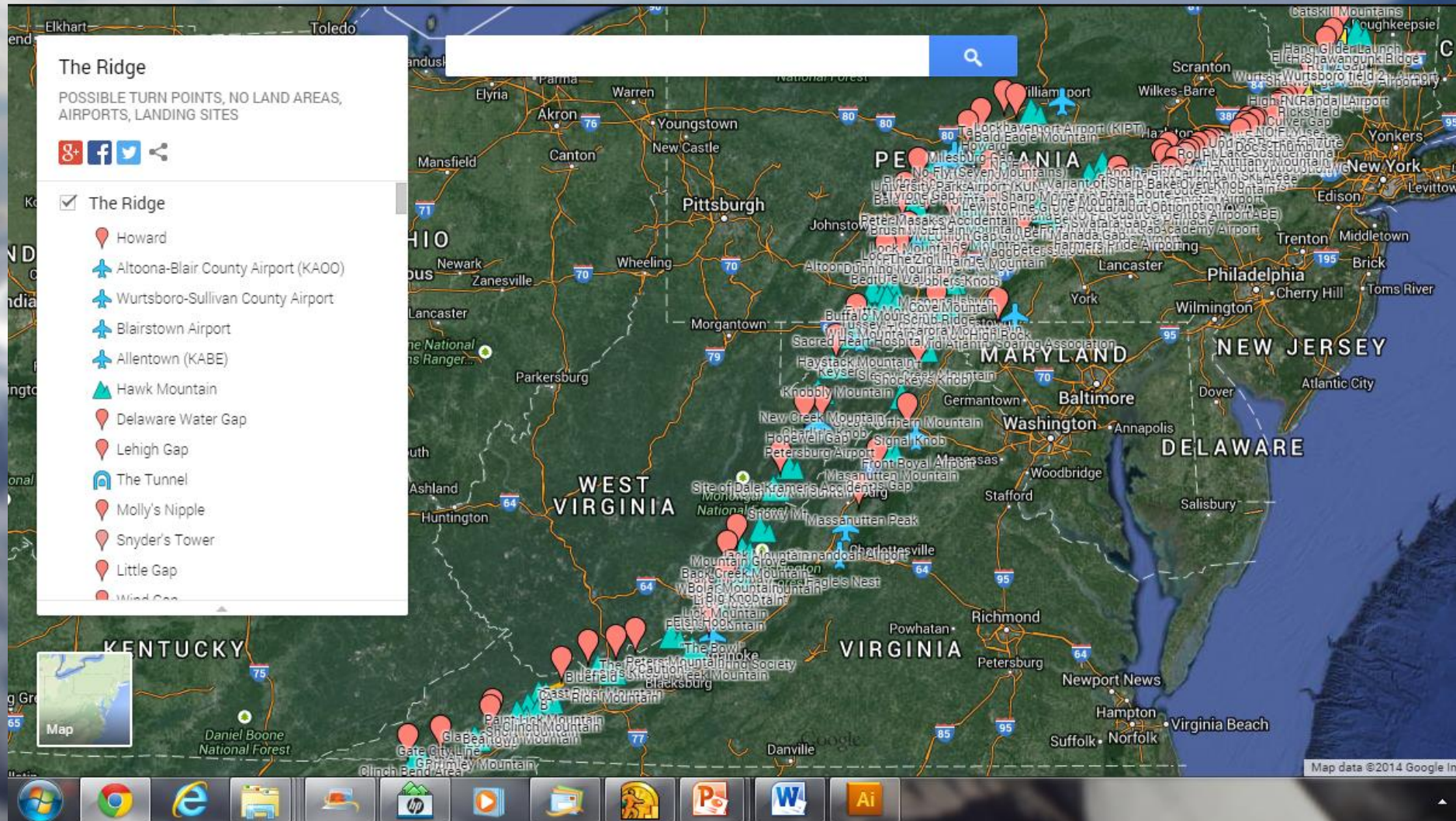
Appalachian Ridge System South Half




Main Ridge
Sunken Creek Ridge

Blue Ridge
Massanutten Ridge

https://mapsengine.google.com/map/viewer?mid=zvgBN5F6QW2Y.kKm1AE_RXNe0



https://mapsengine.google.com/map/viewer?mid=zvgBN5F6QW2Y.kKm1AE_RXNe0

→  https://www.google.com/maps/d/edit?mid=zvgBN5F6QW2Y.kKm1AE_RXNe0



Search Images Maps Play YouTube News Gmail More -















whiskeymike_masa@ms



The Ridge


POSSIBLE TURN POINTS, NO LAND AREAS, AIRPORTS, LANDING SITES

All changes saved in Drive

 Add layer  Share




-  Stone Mountain
-  Tussey Mountain
-  Bald Eagle Mountain
-  Nittany Mountain
-  Talledega Transition
-  Williamsport Airport (KIPT)
-  Altoona Gap
-  Bedford Gap
-  Evitts Mountain
-  "The Wall" 
-  Cumberland Airport
-  Wurtsboro field 1
-  Wurtsboro field 2



"The Wall"

This is a good place to transition across from Tussey when heading to Cumberland.


State Game Lands Number 73B

Raystown Rd

Google


Map data ©2015 Google Imagery ©2015, DigitalGlobe, Landsat, PA Department of Conservation and Natural Resources-PAMAP/USGS, U.S. Geological Survey, USDA Farm Service

[←](#) [→](#) [↺](#) [🔒](#) <https://groups.google.com/forum/#!forum/amsoaring>


[🔍](#)

Groups [NEW TOPIC](#) [↺](#) [Mark all as read](#) [Filters ▾](#)


[▶](#) **Appalachian Mountains Soaring Site** Shared privately
30 of 102 topics (78 unread) ★




Soaring the Appalachians Seminar, 7-8 Feb 2015 (2)
By Janine Acee - 2 posts - 31 views




Ridge Alert Saturday 12/13 and Sunday 12/14 (1)
By Erik Mann - 1 post - 15 views




November 21st Ridge Day (9)
By Daniel Sazhin - 9 posts - 68 views




November 12 and 13 Ridge Alert (8)
By Erik Mann - 8 posts - 68 views




Nov 7 Ridge Alert (8)
By me - 8 posts - 85 views



November 1 and 2 Ridge Alert (13)
By Erik Mann - 13 posts - 143 views



New water into old ballast tanks (2)
By Tom Stepleton - 2 posts - 26 views



Re: Sunday October 26 Ridge Flights (5)

WX Forecasting for Long Ridge/Wave Flights

1 week out

2 – 4 days out

1 – 24 hours out

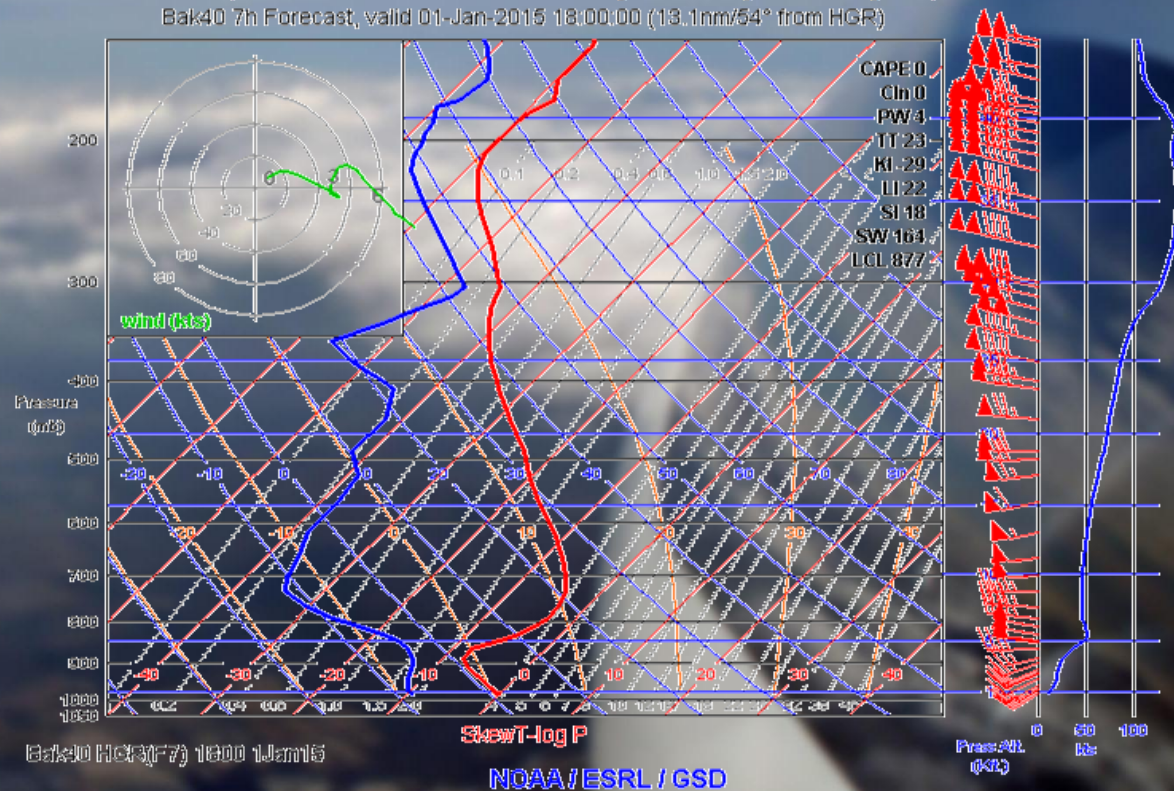
Latest Bak40 analysis is valid at **12:00 UTC**.

Latest Op40 analysis is valid at **11:00 UTC**.

For up-to-date information about the status of RAP runs, see the [RUCRAP forum \(new window\)](#).

(You can subscribe to this forum to get email copies of new posts.)

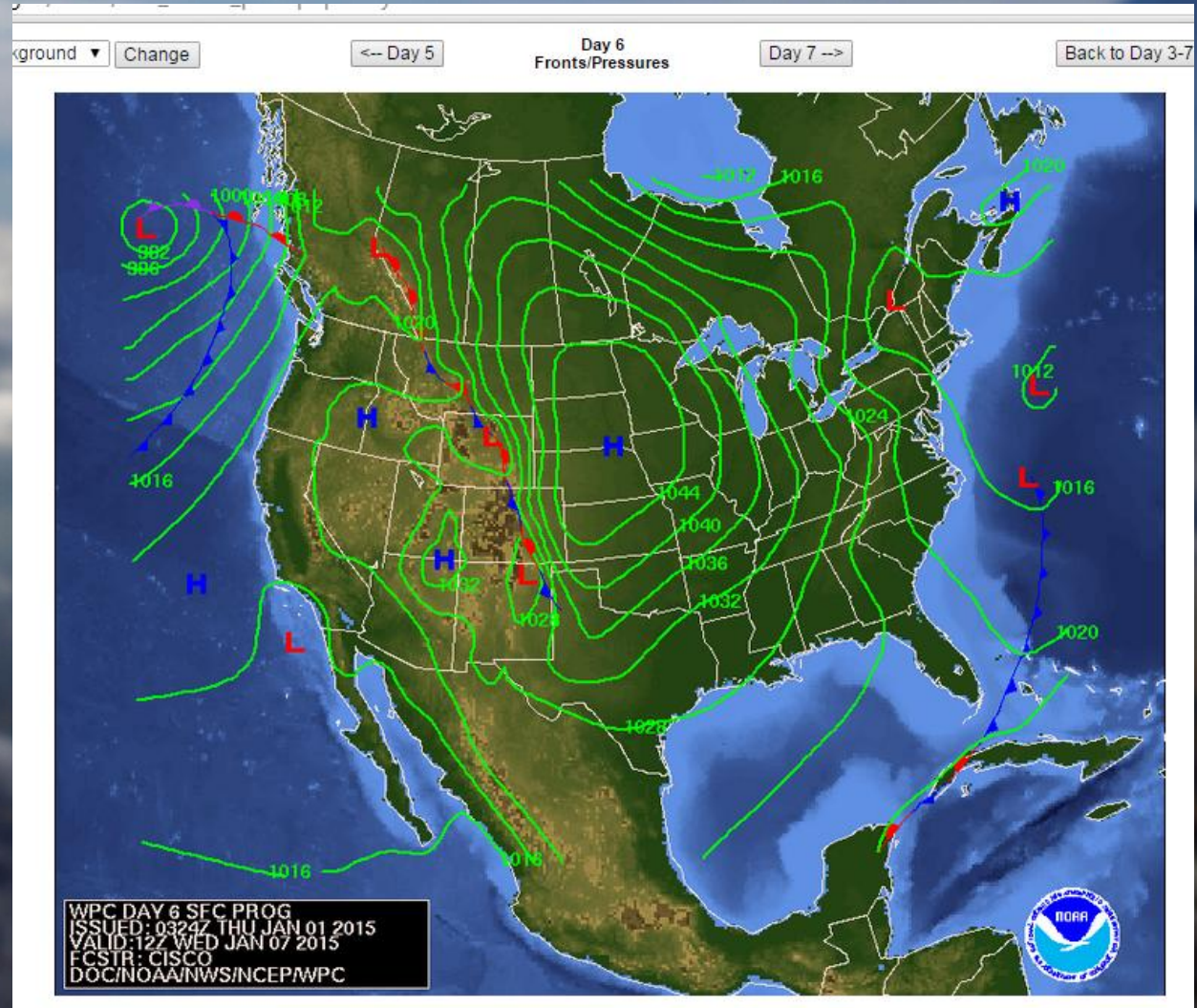
Bak40 7h Forecast, valid 01-Jan-2015 18:00:00 (13.1nm/54° from HGR)



WX Forecasting -- 1 Week Out

3 – 7 Day Sfc Prog Charts – NOAA Weather Prediction Center

<http://www.hpc.ncep.noaa.gov/medr/medr.shtml>



WX Forecasting -- 1 Week Out



General Forecast – Weather Underground



WX Forecasting -- 2 – 4 Days Out

Aviation Weather Center/ADDs

<http://www.aviationweather.gov/adds/>



AVIATION WEATHER CENTER


NOAA NATIONAL WEATHER SERVICE

[HOME](#) [ADVISORIES](#) [FORECASTS](#) [OBSERVATIONS](#) [TOOLS](#) [NEWS](#) [SEARCH](#) [ABOUT](#) [USER](#)

ADDs - Aviation Digital Data Service

Home	Turbulence	Icing	Convection	Wind/Temps	Prog Charts	Java Tools
METARs	Ceil&Vis	TAFs	PIREPS	SIGMETs	Satellite	Radar

News and Information


 [2014 Oct 31] [Experimental CDM Convective Guidance](#)

The **Aviation Digital Data Service (ADDs)** makes available to the aviation community text, digital and graphical forecasts, analyses, and observations of aviation-related weather variables. ADDs is a joint effort of NCAR Research Applications Program (RAP), Global Systems Division (GSD) of NOAA's Earth System Research Laboratory (ESRL), and the National Centers for Environmental Prediction (NCEP) Aviation Weather Center (AWC).

The **National Weather Service** operationally supports this site as well as the following operational products:

<ul style="list-style-type: none">• METARs• TAFs• PIREPS• AIR/SIGMETs• Satellite• Radar	<ul style="list-style-type: none">• Analysis & Prognostic Charts• Graphical wind & temperature charts• National Convective Weather Forecast• Current & Forecast Icing Potential• Graphical Turbulence Guidance
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Current SIGMETs:



The **Federal Aviation Administration** funds and directs the continuing development of ADDs as well as other experimental products being developed by the **FAA Aviation Weather Research Program (AWRP)**.

The results of the latest ADDs development efforts along with new experimental AWRP algorithm results

WX Forecasting -- 2 – 4 Days Out

Aviation Weather Center/ADDs





Graphical Winds,
SFC to FLs,
up to 3.5 days out

Also...
Windmapper.com

Wind/Temps

- Official NWS Textual FB Winds/Temps Aloft

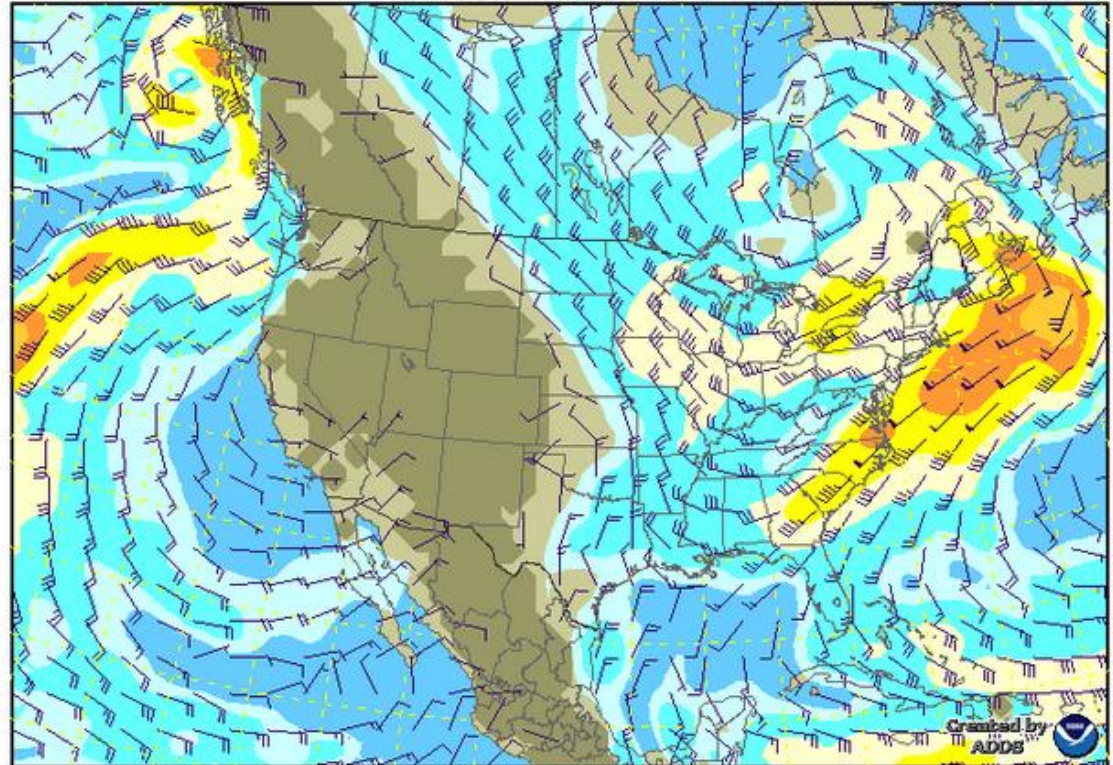
 Print Layout

  3,000' ▾ 1800 UTC Sun 4 Jan 2015 ▾  

☐ Temperature ☒ Wind Speed ☐ Temperature difference ☐ Wind Streamlines

Wind speed (kts) at 3,000 ft MSL (900 mb)

84-hour forecast valid 1800 UTC Sun 04 Jan 2015



15 20 30 40 50 60 80 100 (knots)

WX Forecasting -- 2 – 4 Days Out

Dr Jack's BLIPMAPs -- NAM

Thermal Updraft Velocity

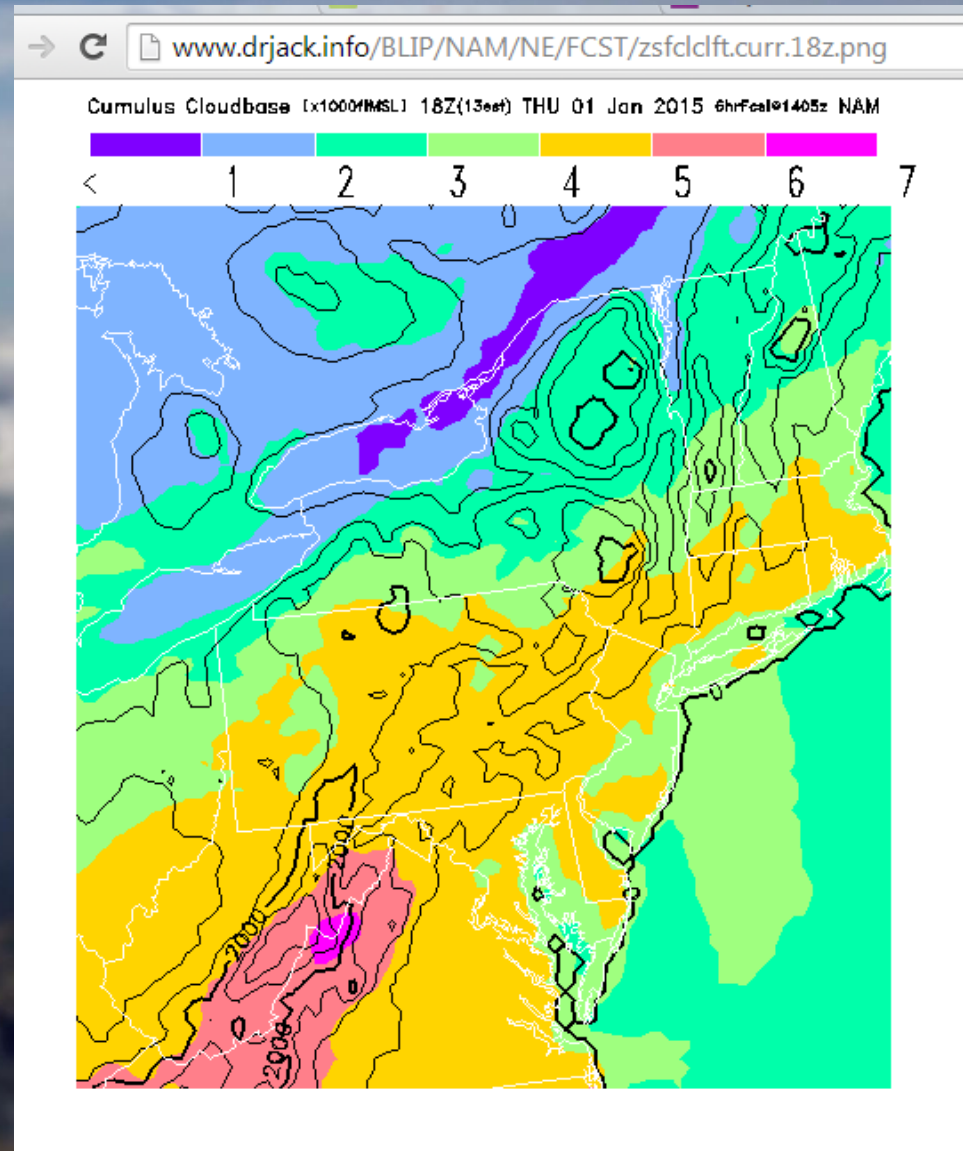
Wind Speed in Boundary Layer

Wind Direction in Boundary Layer

Cumulus Potential

Cumulus Cloudbase

Total Cloud Cover



WX Forecasting -- 2 – 4 Days Out

NOAA Graphic Weather Site

<http://graphical.weather.gov/sectors/nemetroWeek.php?expandweek=ON#tabs>

graphical.weather.gov/sectors/nemetroWeek.php?expandweek=ON#tabs

Warnings & Forecasts | Graphical Forecasts | National Maps | Radar | Water | Air Quality | Satellite | Climate

Graphical Forecasts - Northeast Metro Area

Daily View | Weekly View | Loops

Image List | Page Help | Metric Units | Key

Public Marine Fire Weather Tropical Hazardous

Go to Region | View Images | Get Text Forecast

Element Period	High / Low Temperature	Probability of Precip.	Weather	Hazards	Temperature	Dewpoint	Wind Speed & Direction	Wind Gust	Sky Cover	Amount of Precip.	Snow Amount	Ice Accumulation	Wave Height	Apparent Temperature	Relative Humidity
Tonight	Low	PoP12	7pm 10pm 1am 4am	7pm 10pm 1am 4am	7pm 10pm 1am 4am	7pm 10pm 1am 4am	7pm 10pm 1am 4am	7pm 10pm 1am 4am	7pm 10pm 1am 4am	1am 7am	1am 7am	1am 7am	1am 7am	7pm 10pm 1am 4am	7pm 10pm 1am 4am
Saturday	High	PoP12	7am 10am 1pm 4pm	7am 10am 1pm 4pm	7am 10am 1pm 4pm	7am 10am 1pm 4pm	7am 10am 1pm 4pm	7am 10am 1pm 4pm	7am 10am 1pm 4pm	1pm 7pm	1pm 7pm	1pm 7pm	1pm 7pm	7am 10am 1pm 4pm	7am 10am 1pm 4pm
Saturday Night	Low	PoP12	7pm 10pm 1am 4am	7pm 10pm 1am 4am	7pm 10pm 1am 4am	7pm 10pm 1am 4am	7pm 10pm 1am 4am	7pm 10pm 1am 4am	7pm 10pm 1am 4am	1am 7am	1am 7am	1am 7am	1am 7am	7pm 10pm 1am 4am	7pm 10pm 1am 4am
Sunday	High	PoP12	7am 10am 1pm 4pm	7am 10am 1pm 4pm	7am 10am 1pm 4pm	7am 10am 1pm 4pm	7am 10am 1pm 4pm	7am 10am 1pm 4pm	7am 10am 1pm 4pm	1pm 7pm	1pm 7pm	1pm 7pm	1pm 7pm	7am 10am 1pm 4pm	7am 10am 1pm 4pm
Sunday Night	Low	PoP12	7pm 10pm 1am 4am	7pm 10pm 1am 4am	7pm 10pm 1am 4am	7pm 10pm 1am 4am	7pm 10pm 1am 4am	7pm 10pm 1am 4am	7pm 10pm 1am 4am	1am 7am			1am 7am	7pm 10pm 1am 4am	7pm 10pm 1am 4am
Monday	High	PoP12	7am 10am 1pm 4pm	7am 10am 1pm 4pm	7am 10am 1pm 4pm	7am 10am 1pm 4pm	7am 10am 1pm 4pm	7am 10am 1pm 4pm	7am 10am 1pm 4pm	1pm 7pm			1pm 7pm	7am 10am 1pm 4pm	7am 10am 1pm 4pm
Monday Night	Low	PoP12	7pm 10pm 1am 4am	7pm 10pm 1am 4am	7pm 10pm 1am 4am	7pm 10pm 1am 4am	7pm 10pm 1am 4am	7pm 10pm 1am 4am	7pm 10pm 1am 4am				1am 7am	7pm 10pm 1am 4am	7pm 10pm 1am 4am
Tuesday	High	PoP12	7am 10am 1pm 4pm	7am 10am 1pm 4pm	7am 10am 1pm 4pm	7am 10am 1pm 4pm	7am 10am 1pm 4pm	7am 10am 1pm 4pm	7am 10am 1pm 4pm				1pm 7pm	7am 10am 1pm 4pm	7am 10am 1pm 4pm
Tuesday Night	Low	PoP12	7pm 10pm 1am 4am	7pm 10pm 1am 4am	7pm 10pm 1am 4am	7pm 10pm 1am 4am	7pm 10pm 1am 4am	7pm 10pm 1am 4am	7pm 10pm 1am 4am				1am 7am	7pm 10pm 1am 4am	7pm 10pm 1am 4am
Wednesday	High	PoP12	7am 10am 1pm 4pm	7am 10am 1pm 4pm	7am 10am 1pm 4pm	7am 10am 1pm 4pm	7am 10am 1pm 4pm	7am 10am 1pm 4pm	7am 10am 1pm 4pm				1pm 7am	7am 10am 1pm 4pm	7am 10am 1pm 4pm

Script: getnewimg('Sky',13,0)

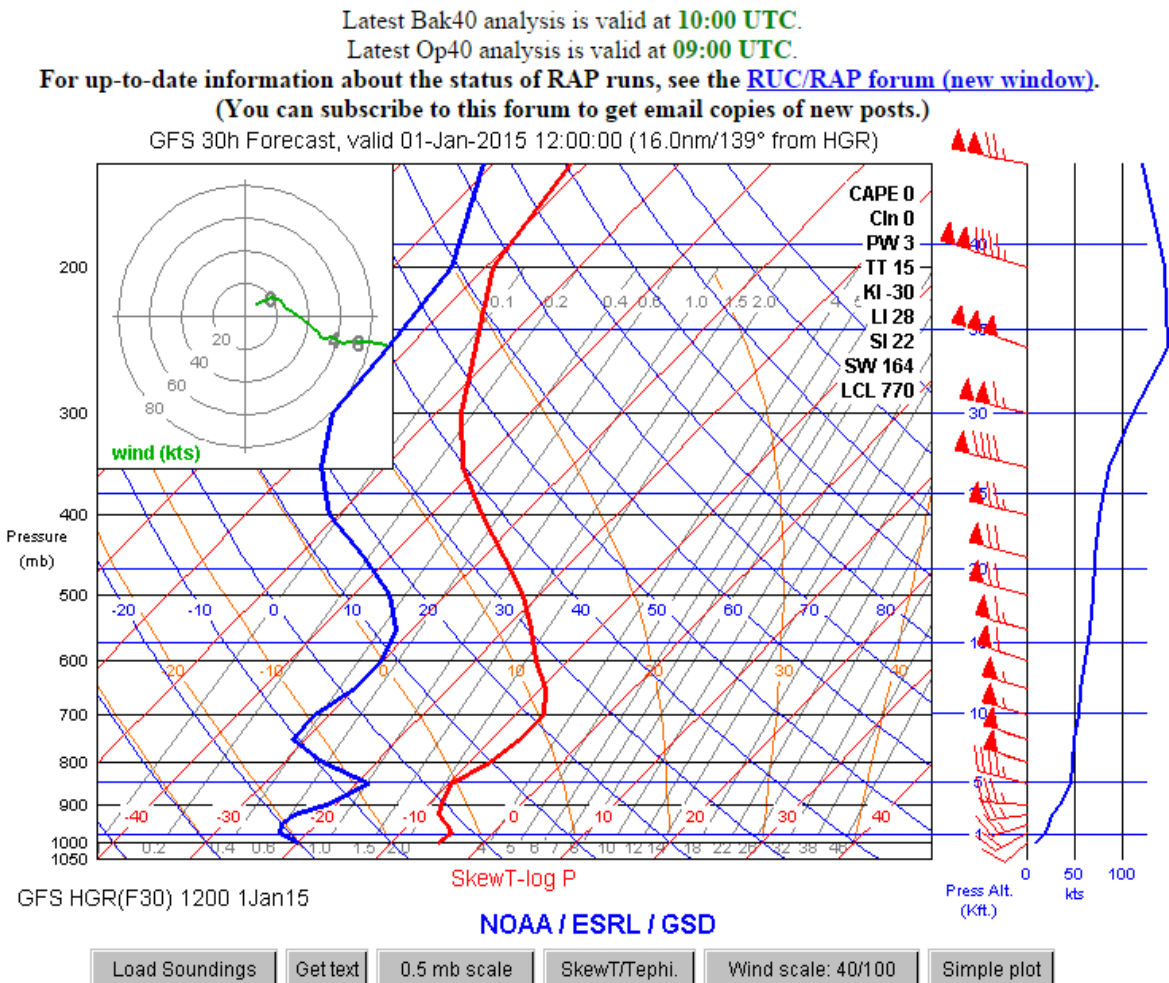
Sky Cover(%) For Sun Feb 15 2015 7AM EST (Sun Feb 15 2015 12Z)

National Digital Forecast Database

WX Forecasting -- 2 – 4 Days Out

GFS Soundings –

<http://www-frd.fsl.noaa.gov/mab/soundings/java>



Simple plot

WX Forecasting -- 1 – 24 Hours Out

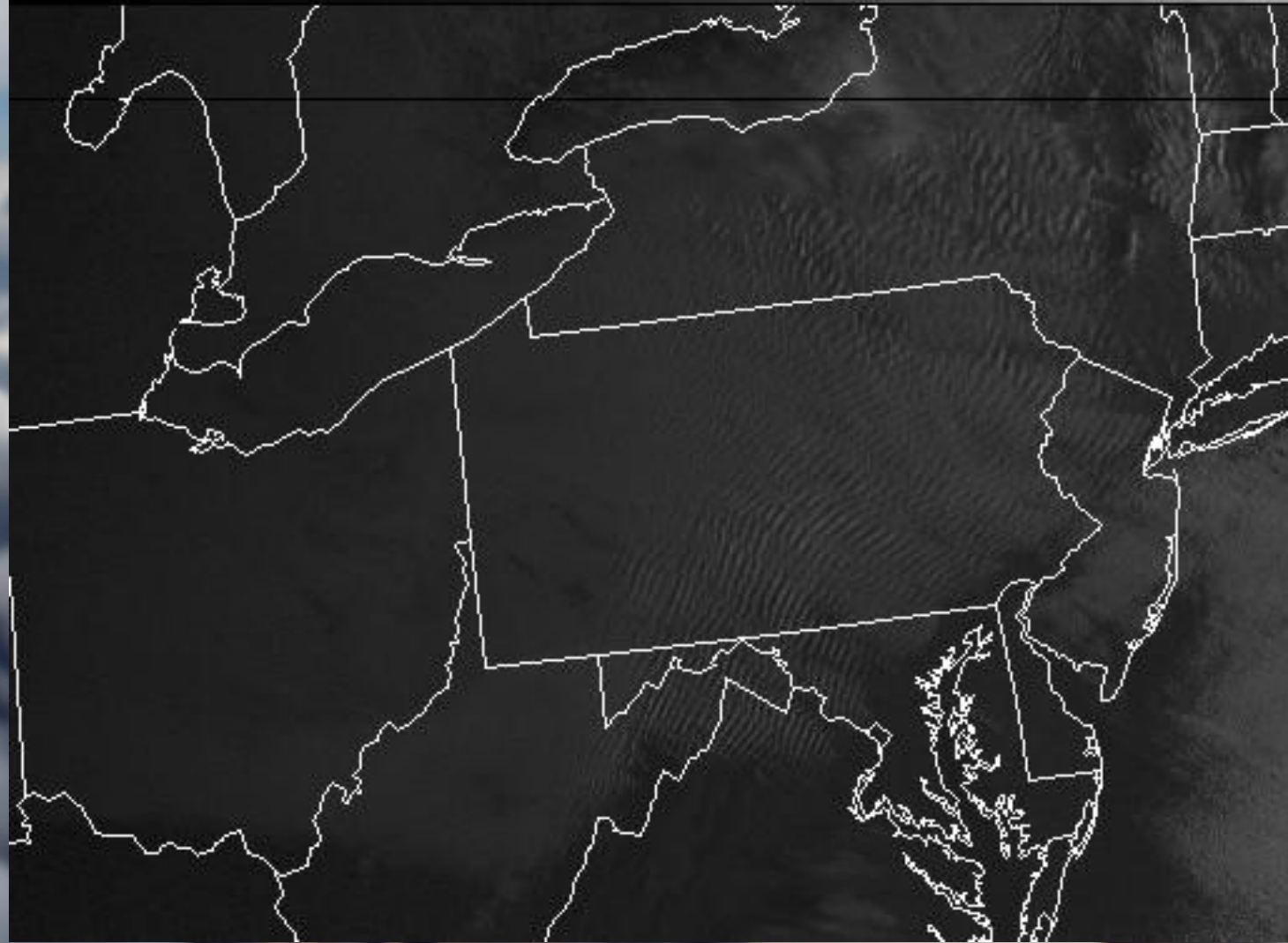
ADDS Satellite Imagery

(Visible and IR)

1231 UTC Thu 21 Feb 2013

Visible Satellite

0 6 9 12 15 18 21 24 27 30 33 36 39 42 45 48 51 54 57 60 63 66 69 72 75



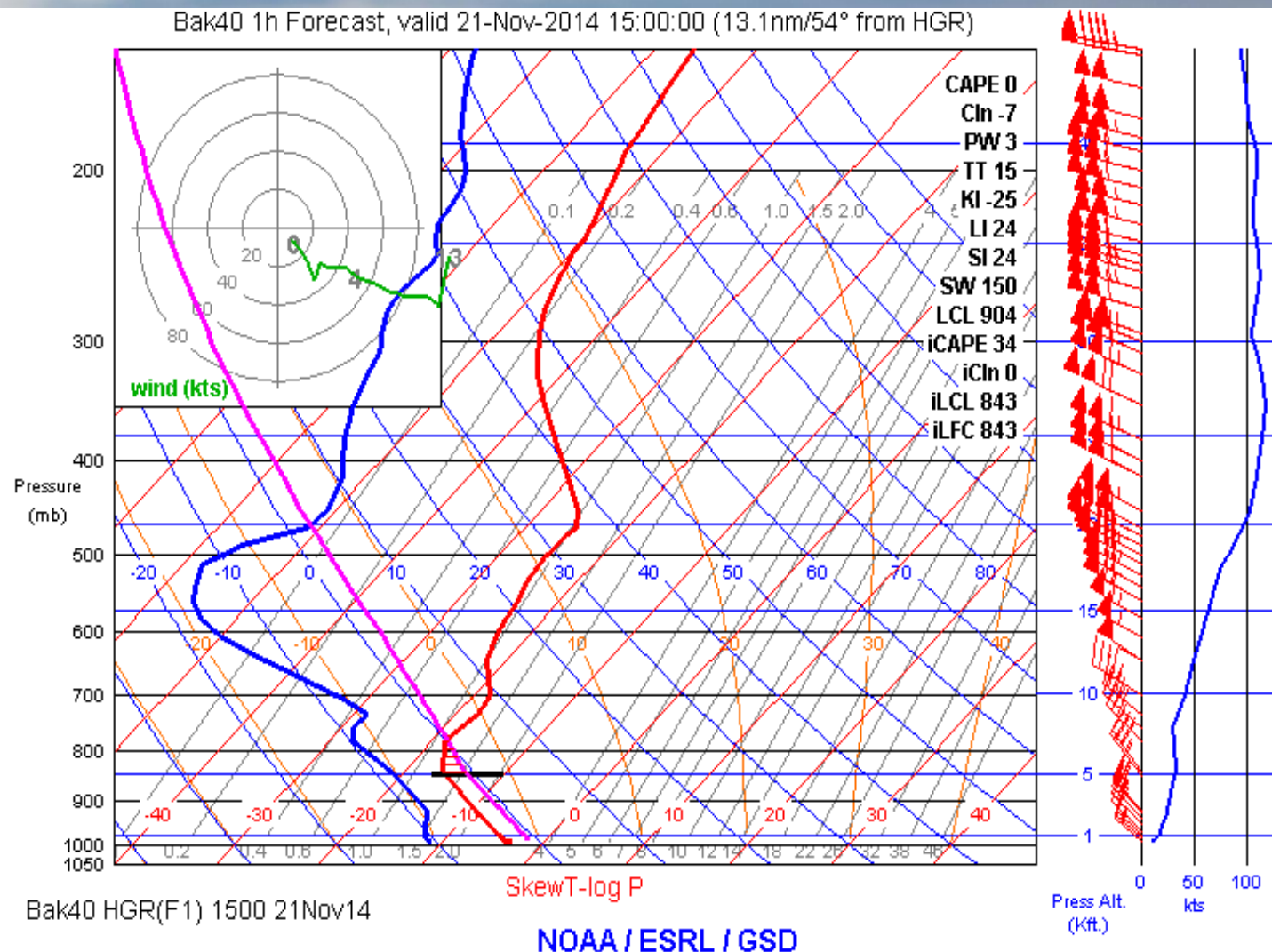
WX Forecasting -- 1 – 24 Hours Out

1 hours out, turn off computer and look at the sky...



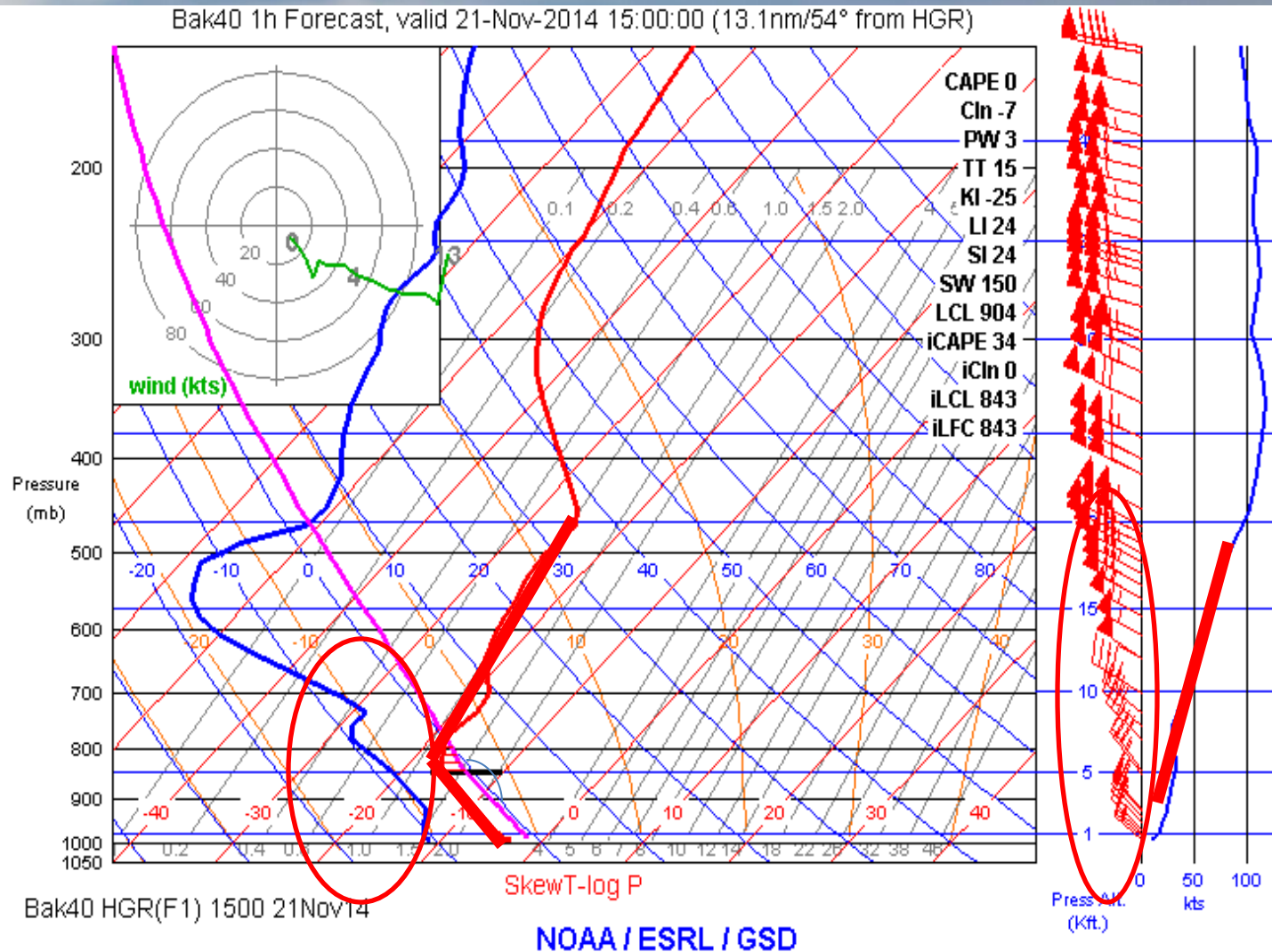
WX Forecasting – Skew T Sounding Plot

21 Nov 14, an average good wave/ridge day...



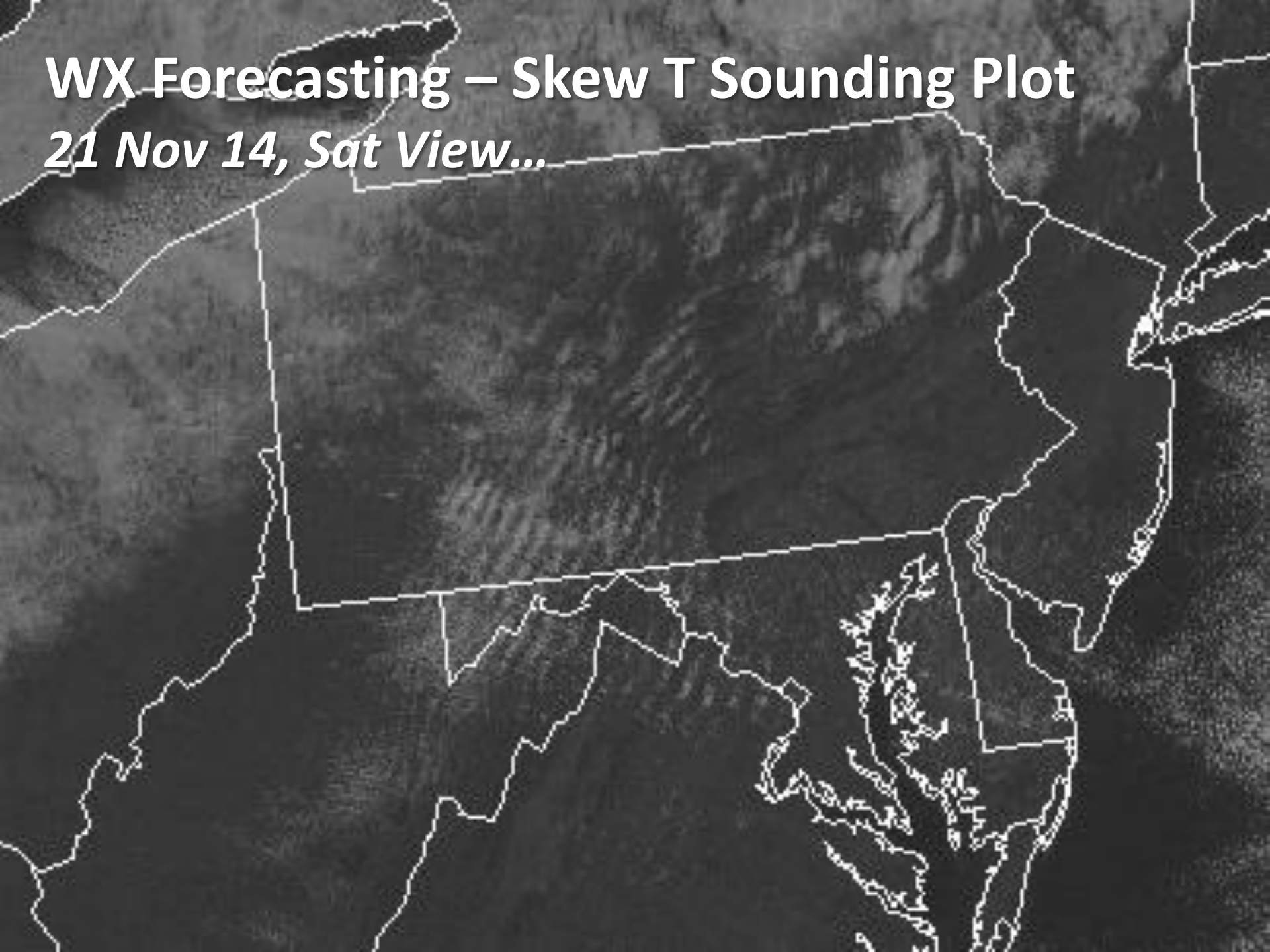
WX Forecasting – Skew T Sounding Plot

21 Nov 14, Key Items...



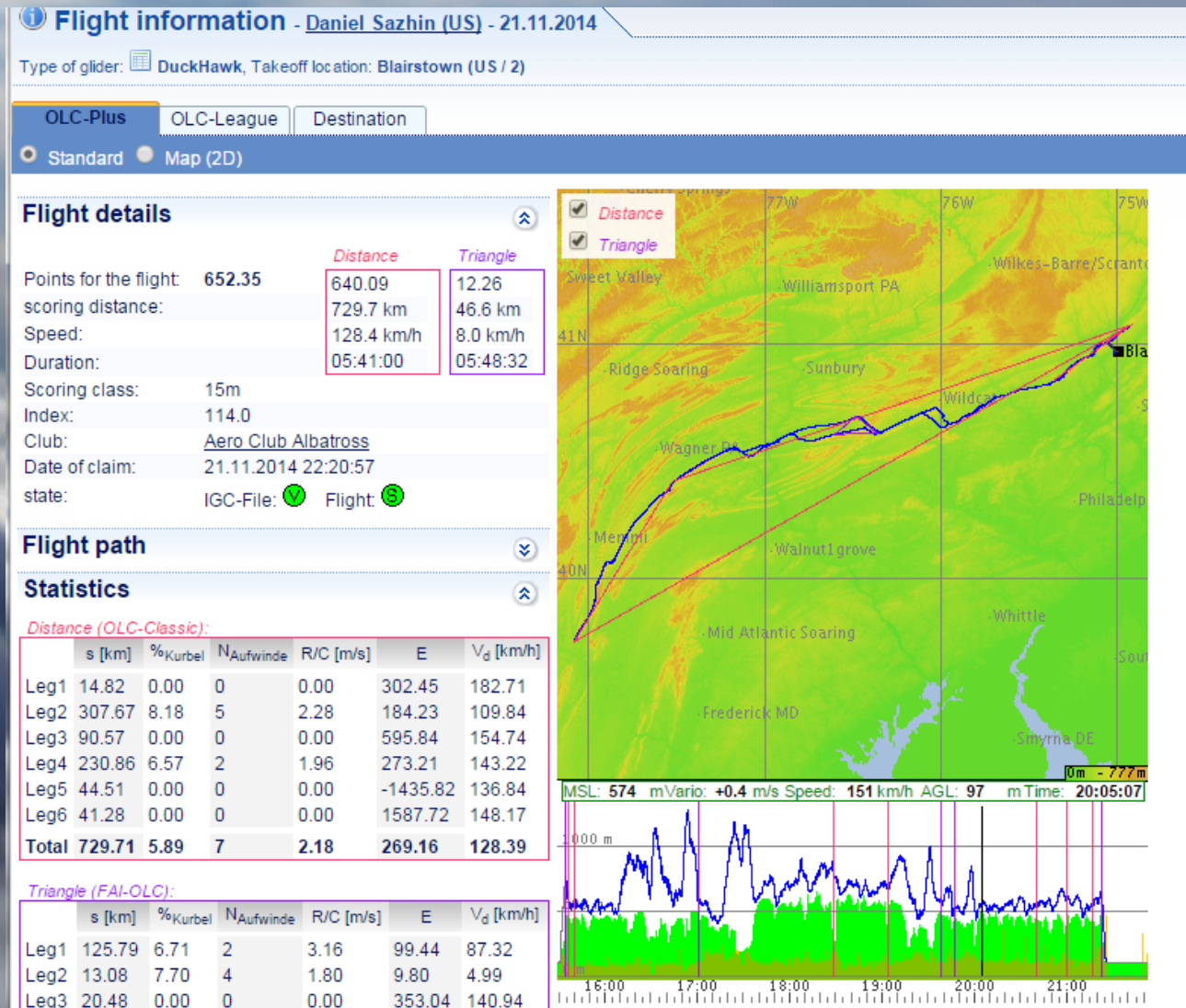
WX Forecasting – Skew T Sounding Plot

21 Nov 14, Sat View...



WX Forecasting – Skew T Sounding Plot

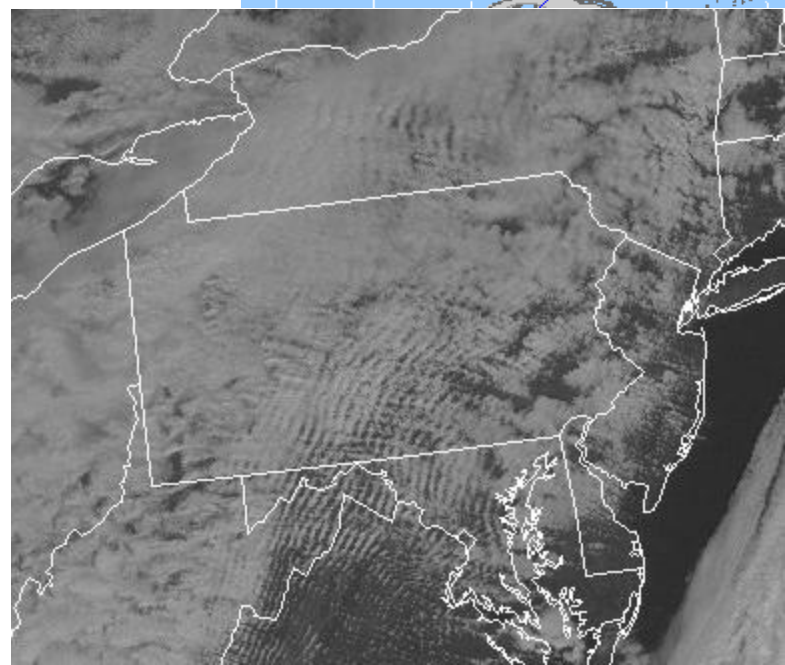
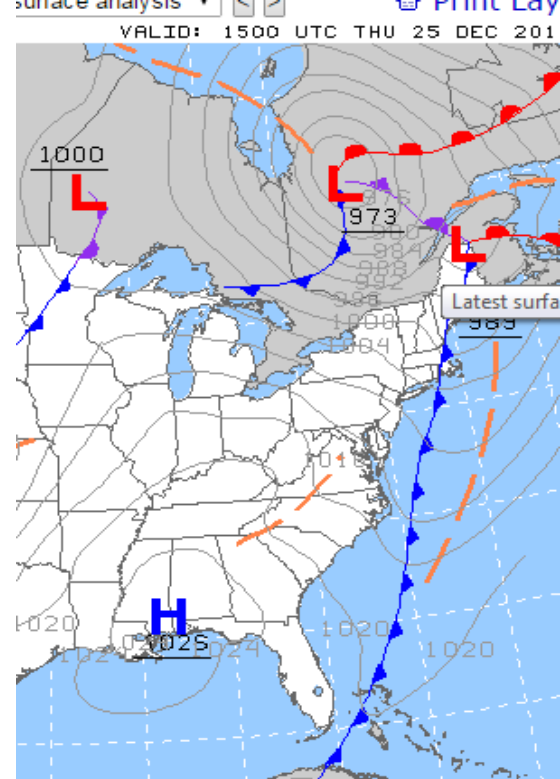
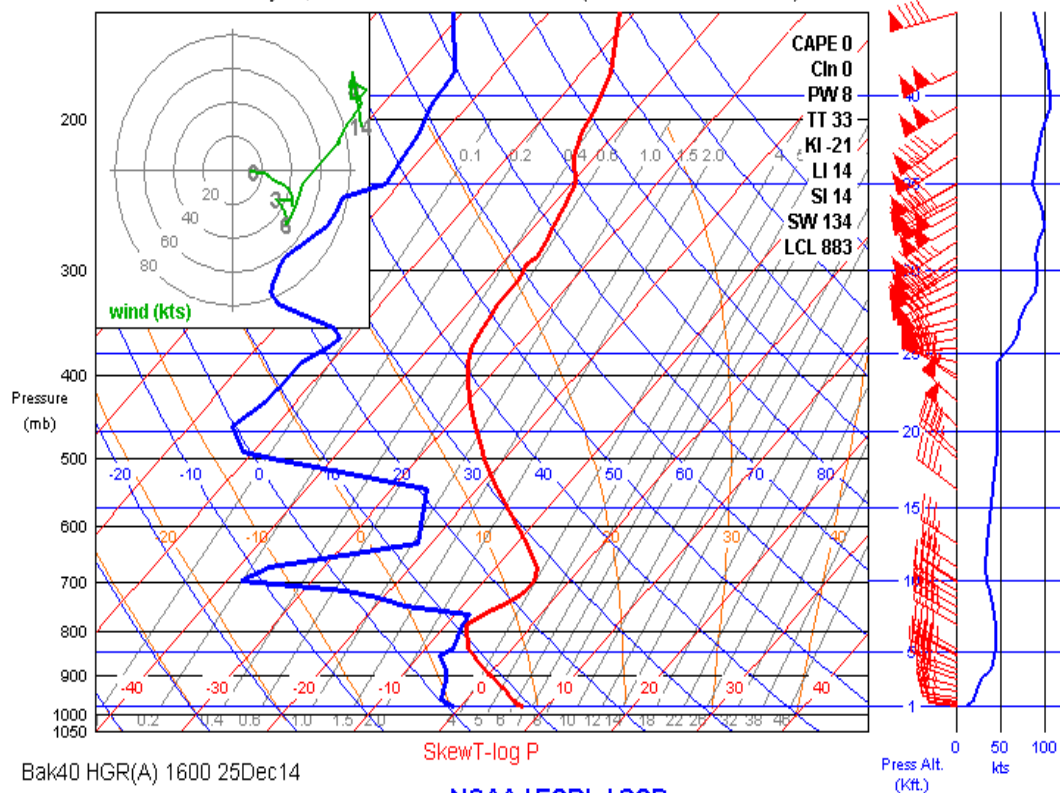
21 Nov 14, Dan Sazhin, 730km from Blirstown



25 Dec 2014

Very nice wave/ridge day...

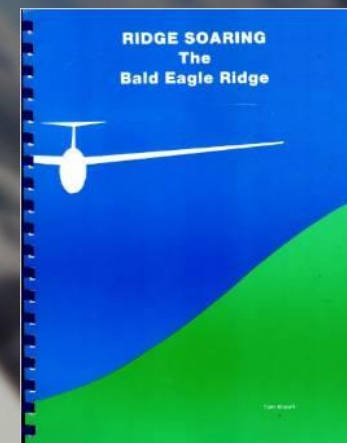
Bak40 Analysis, valid 25-Dec-2014 16:00:00 (13.1nm/54° from HGR)



Ridge Flying... the beginning



Ridge Flying... today



Appalachian Ridge Soaring History

Tom Knauff
Ridge Soaring



Karl Striedriek / Kilo Sierra

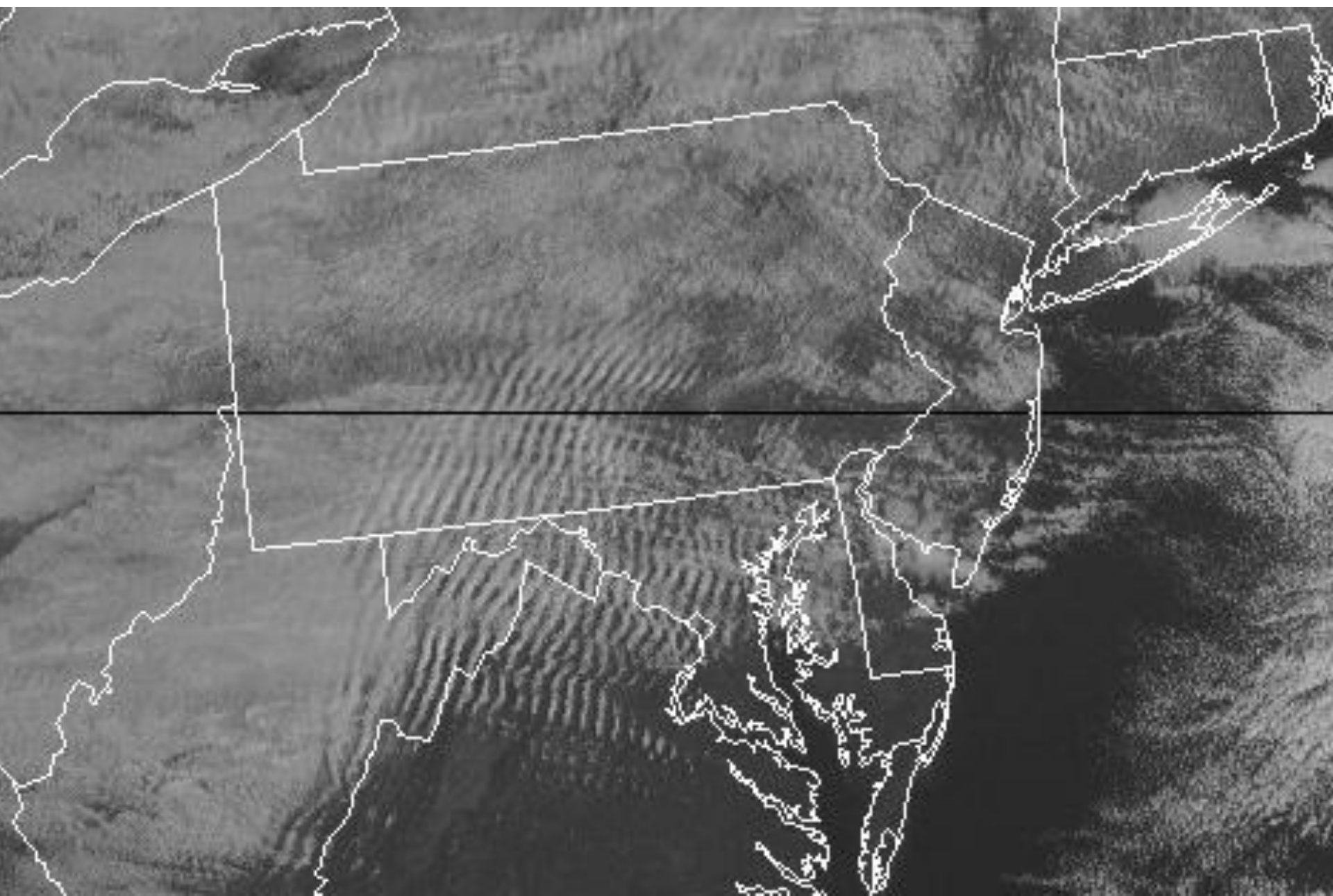


Wave Flying

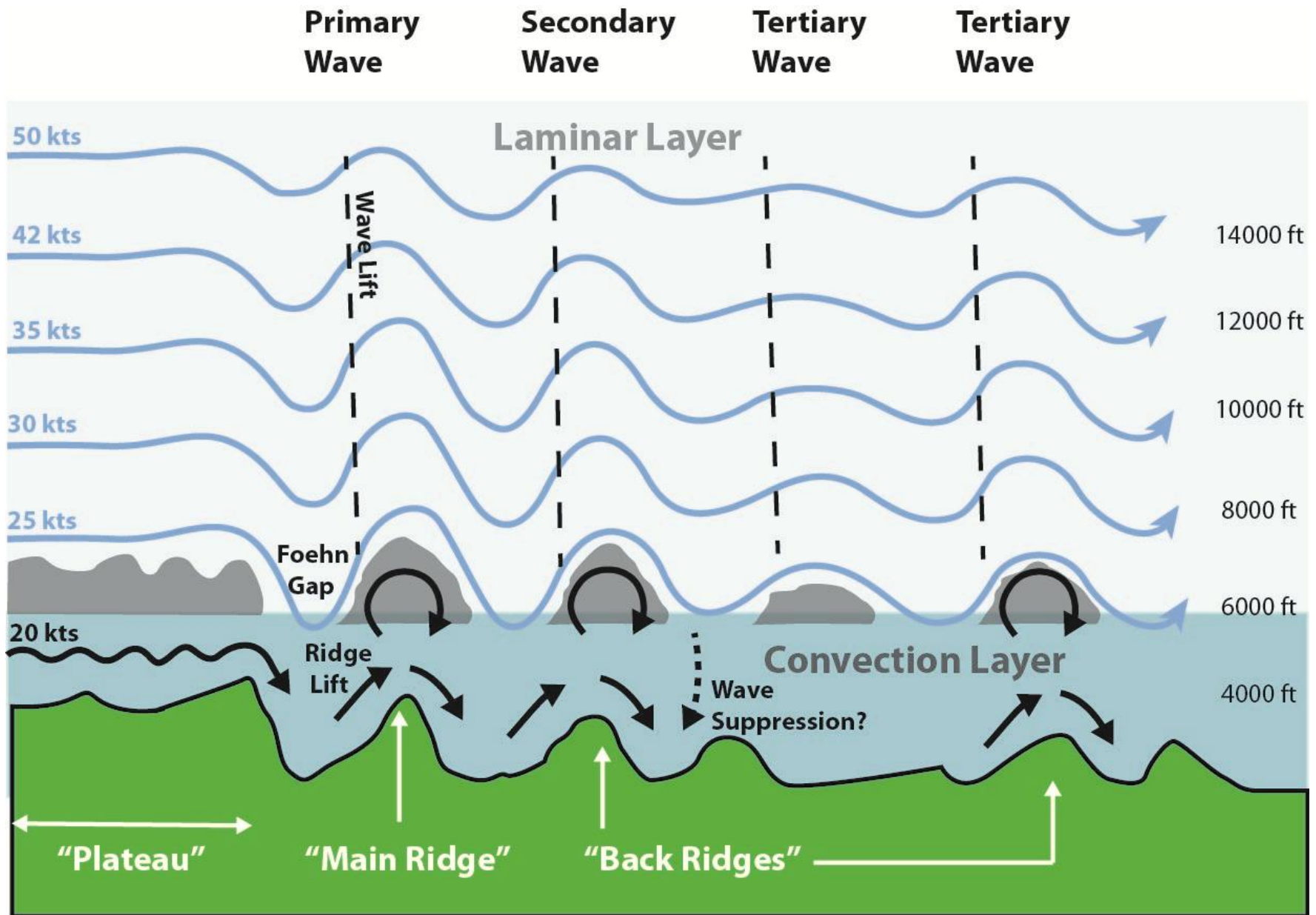
LBL



Top view of great wave day...



Everything in one sketch...



View ahead with good XC wave conditions

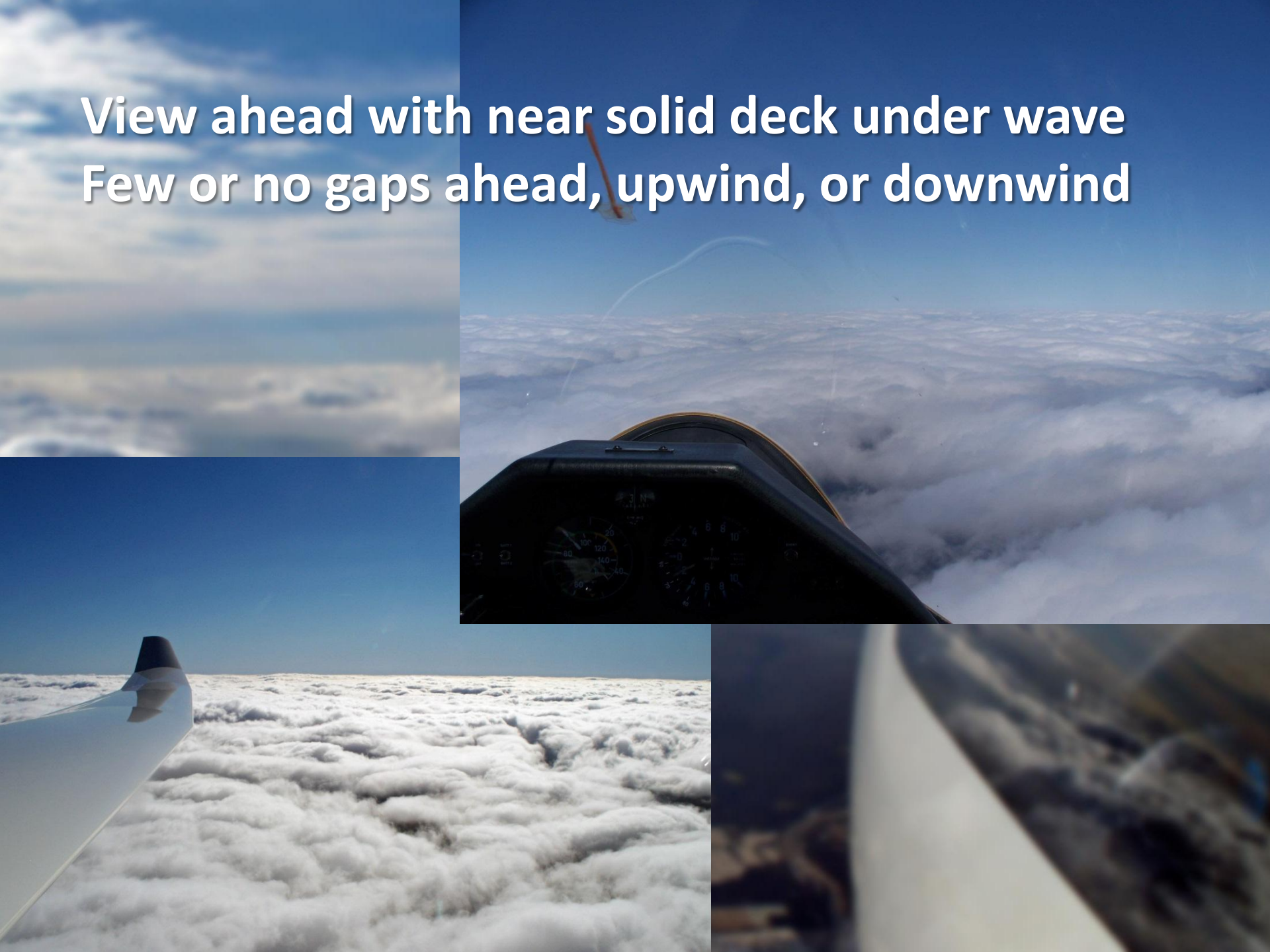
Well organized wave markers and gaps

Cruising at 80kts IAS, 57 kts over ground

Half knot up



View ahead with near solid deck under wave
Few or no gaps ahead, upwind, or downwind



An aerial photograph taken from a high altitude, looking down on the Shenandoah Valley. The Shenandoah River is visible, winding through the landscape. The terrain is a patchwork of green fields, brown agricultural land, and small clusters of buildings. The sky is a clear, deep blue. The wing of the aircraft is visible in the upper right corner.

**Cruising down Shenandoah Valley at
10,000 ft msl in blue...**

**View ahead with cloud deck above and
wave markers below**



Some wave flying safety considerations...

Traffic avoidance

Transponder

PowerFlarm

PCAS

Mk 1 Eyeball

True/Indicated Vne

Oxygen

Caught “on top”

Long Flights on Main Ridge Routes and Tasks...

1000k 3 TP Badge Flights

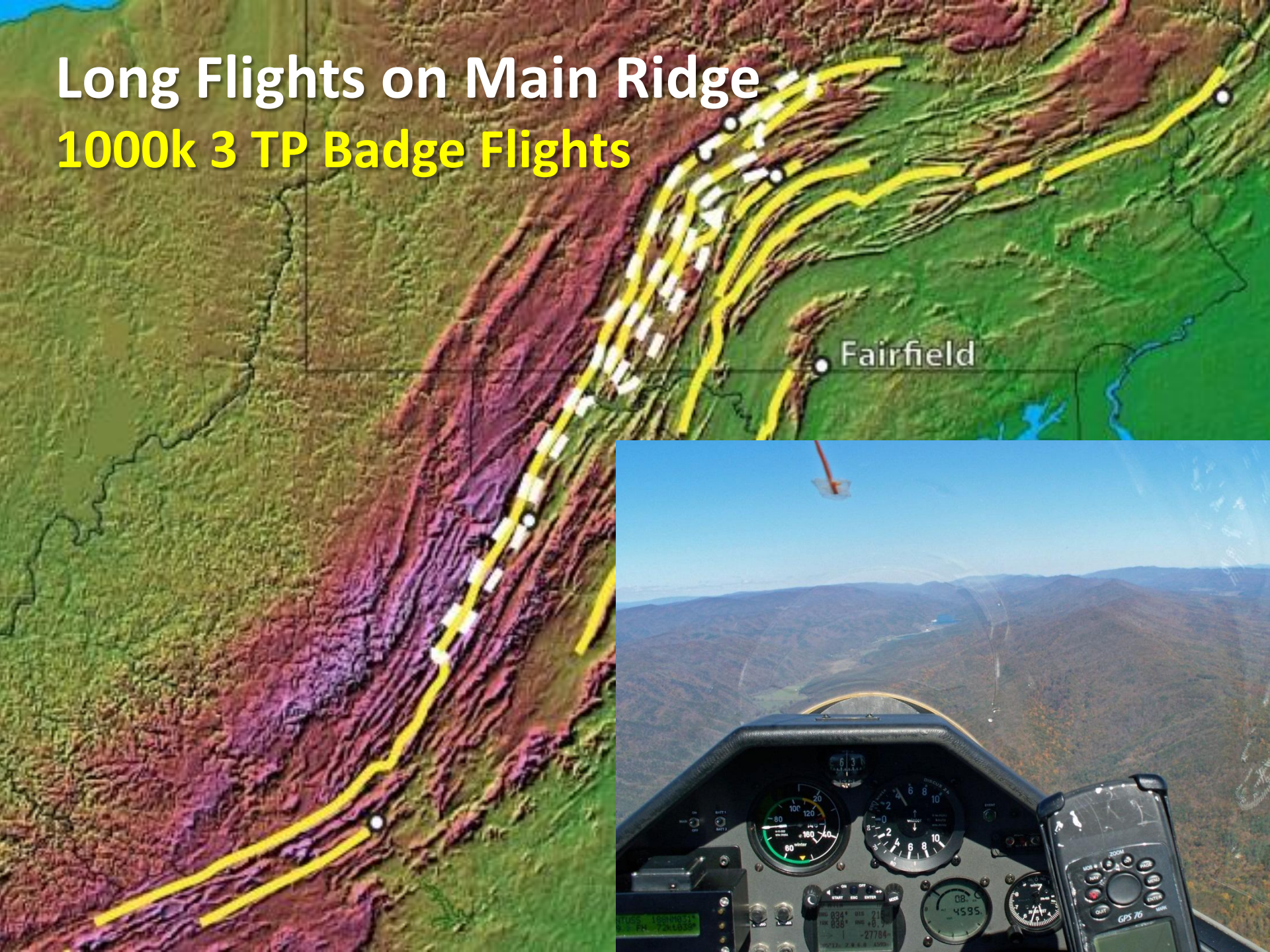
1000k Out & Back Flights

1000k FAI Triangle Flights

1500k 3 TP Badge Flights

Long Flights on Main Ridge

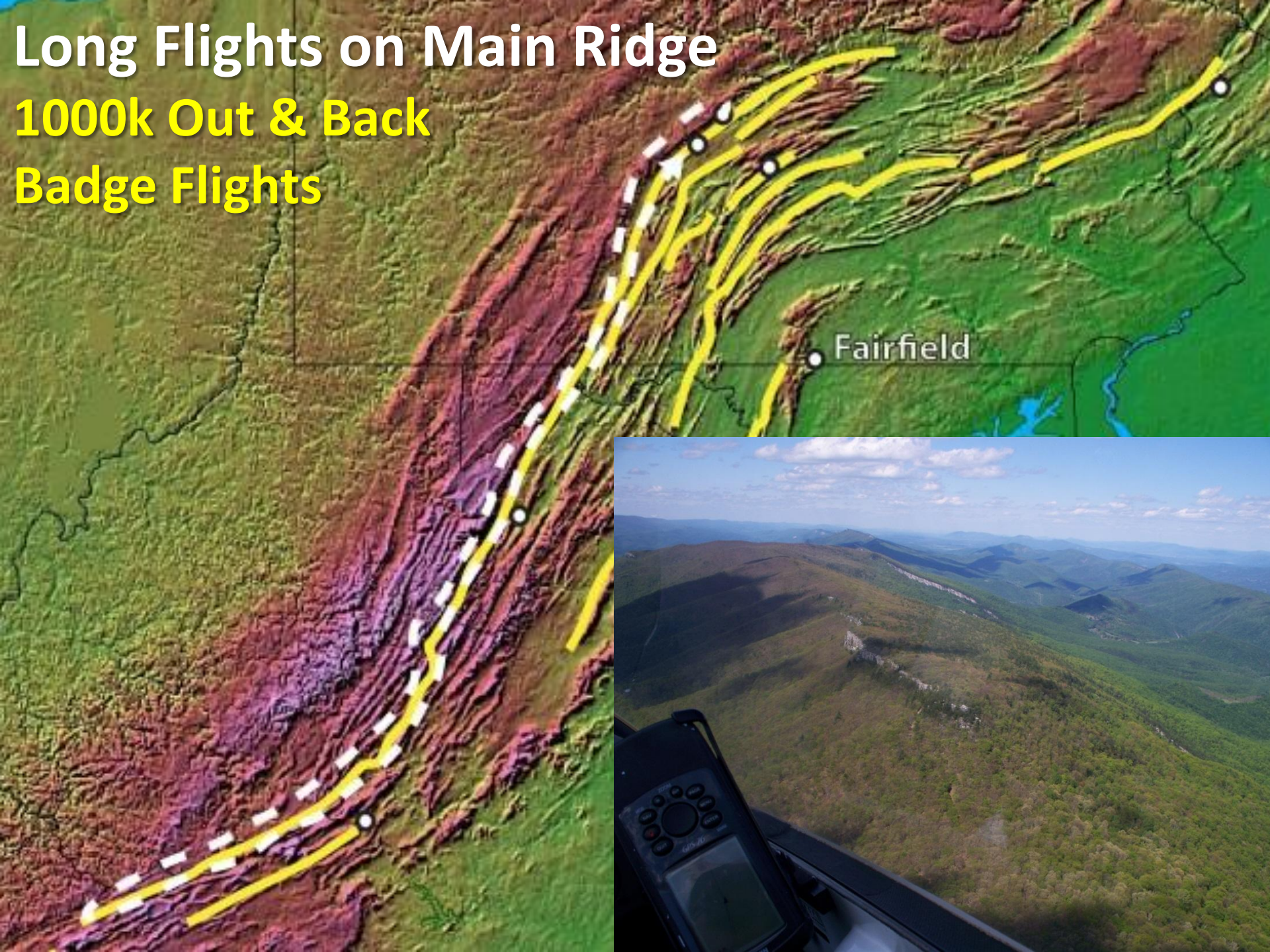
1000k 3 TP Badge Flights



Long Flights on Main Ridge

1000k Out & Back

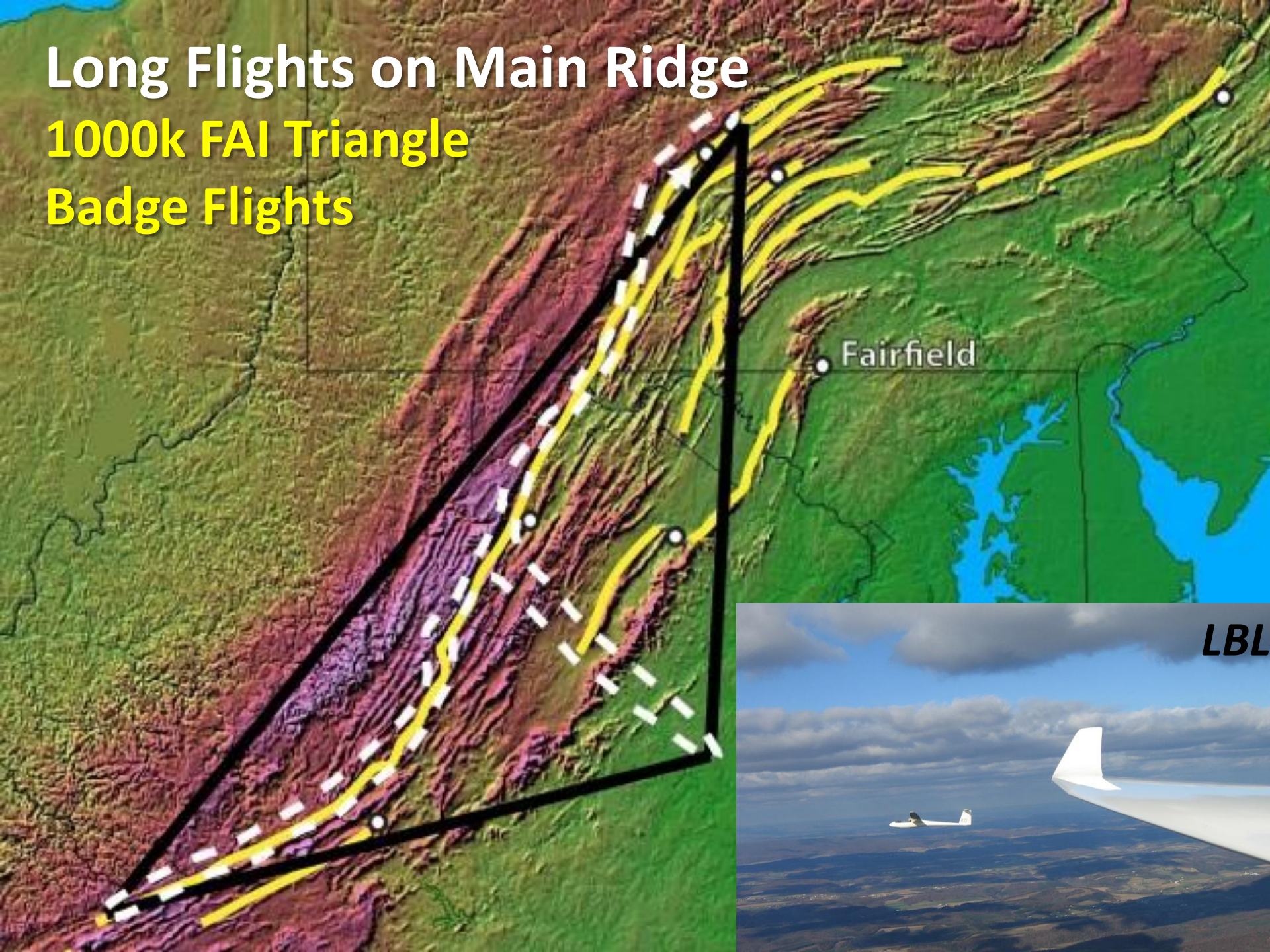
Badge Flights



Long Flights on Main Ridge

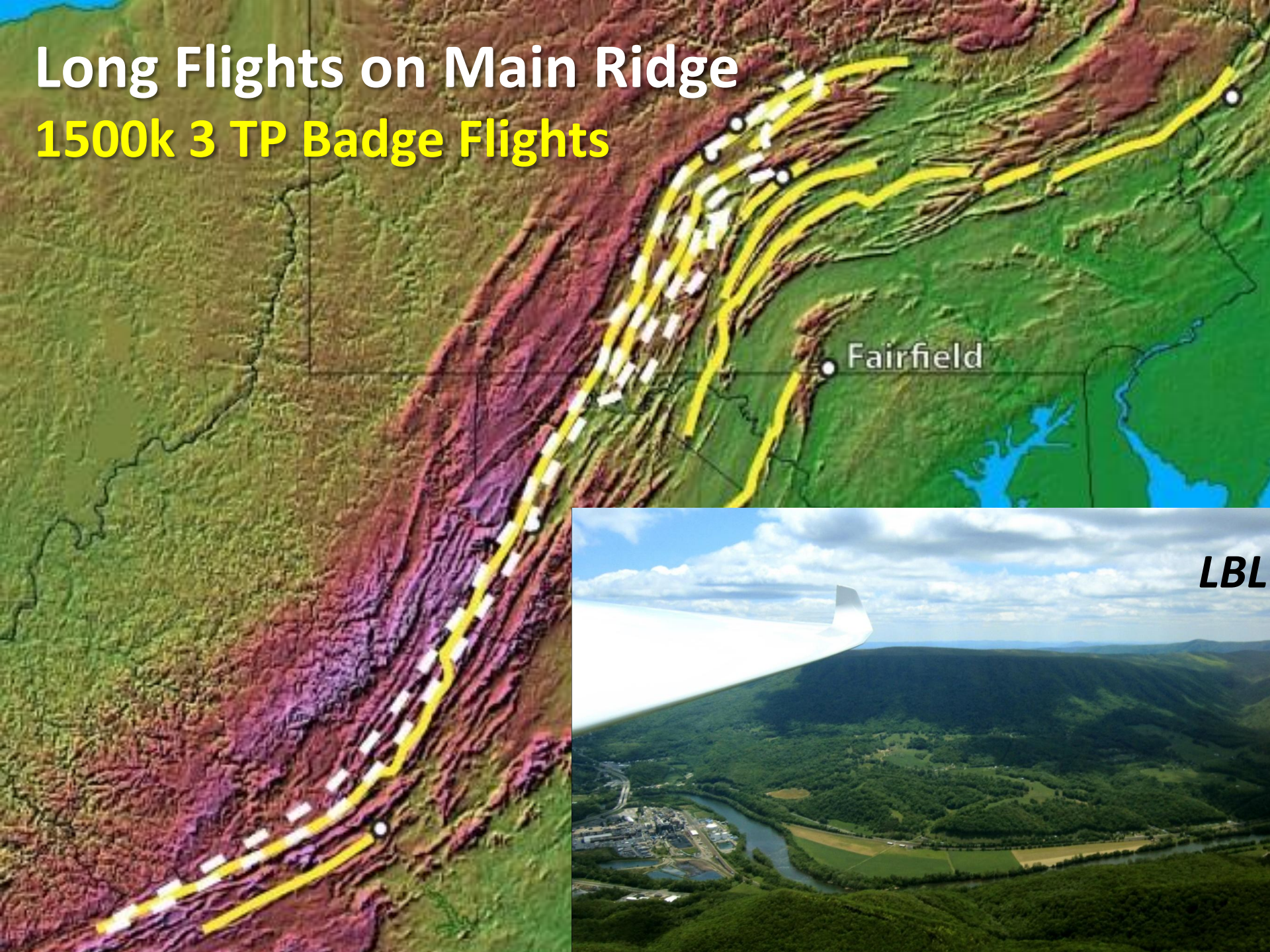
1000k FAI Triangle

Badge Flights



Long Flights on Main Ridge

1500k 3 TP Badge Flights



Going to the limit on the ridge... 2107 km @ 103 mph

OLC-Plus

OLC-League

Standard

Google-Maps

Flight details

Points for the flight: 1856.6

scoring distance:

Speed:

Duration:

Scoring class: 15m

Index: 114.0

Club: -No Club- HG/PG (USA)

Date of claim: 11.05.2012 15:45:53

state: IGC-File: Flight:

Distance

Triangle

1,844.45

12.15

2,102.7 km

46.2 km

166.8 km/h

4.3 km/h

12:36:21

10:44:33

Flight path

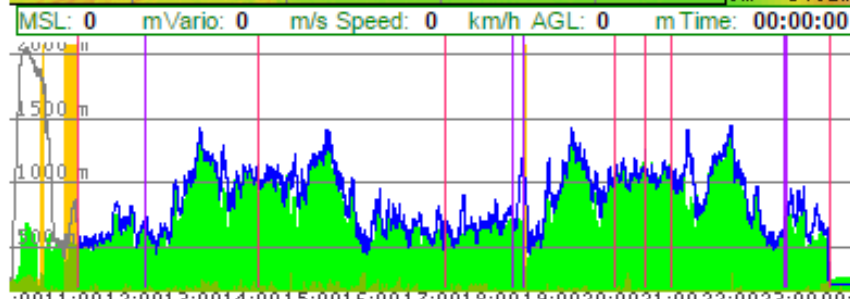
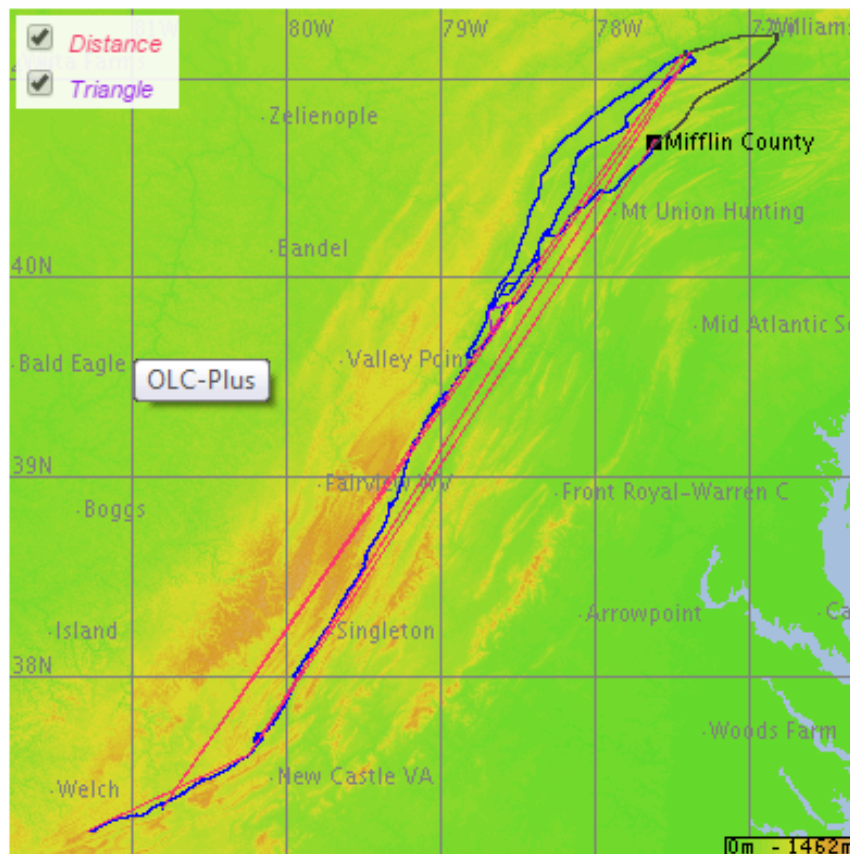
Statistics

Distance (OLC-Classic):

	s [km]	%Kurbel	N _{Aufwinde}	R/C [m/s]	E	V _d [km/h]
Leg1	511.10	1.36	1	2.05	-3234.80	169.36
Leg2	514.59	1.06	2	0.93	1012.98	163.13
Leg3	462.41	2.99	3	0.73	-5780.17	163.57
Leg4	101.54	0.00	0	0.00	-393.56	201.73
Leg5	102.02	0.00	0	0.00	455.43	222.85
Leg6	411.01	2.73	3	1.40	393.31	155.36
Total	2102.67	1.98	10	1.19	1562.16	166.80

Triangle (FAI-OLC):

	s [km]	%Kurbel	N _{Aufwinde}	R/C [m/s]	E	V _d [km/h]
Leg1	11.45	1.83	5	1.08	32.17	1.86
Leg2	20.23	31.72	2	1.13	-459.88	97.91



Long Flights from Fairfield Routes & Tasks...

1000k OLC Flights

1000k FAI 3 Turnpoint Flights

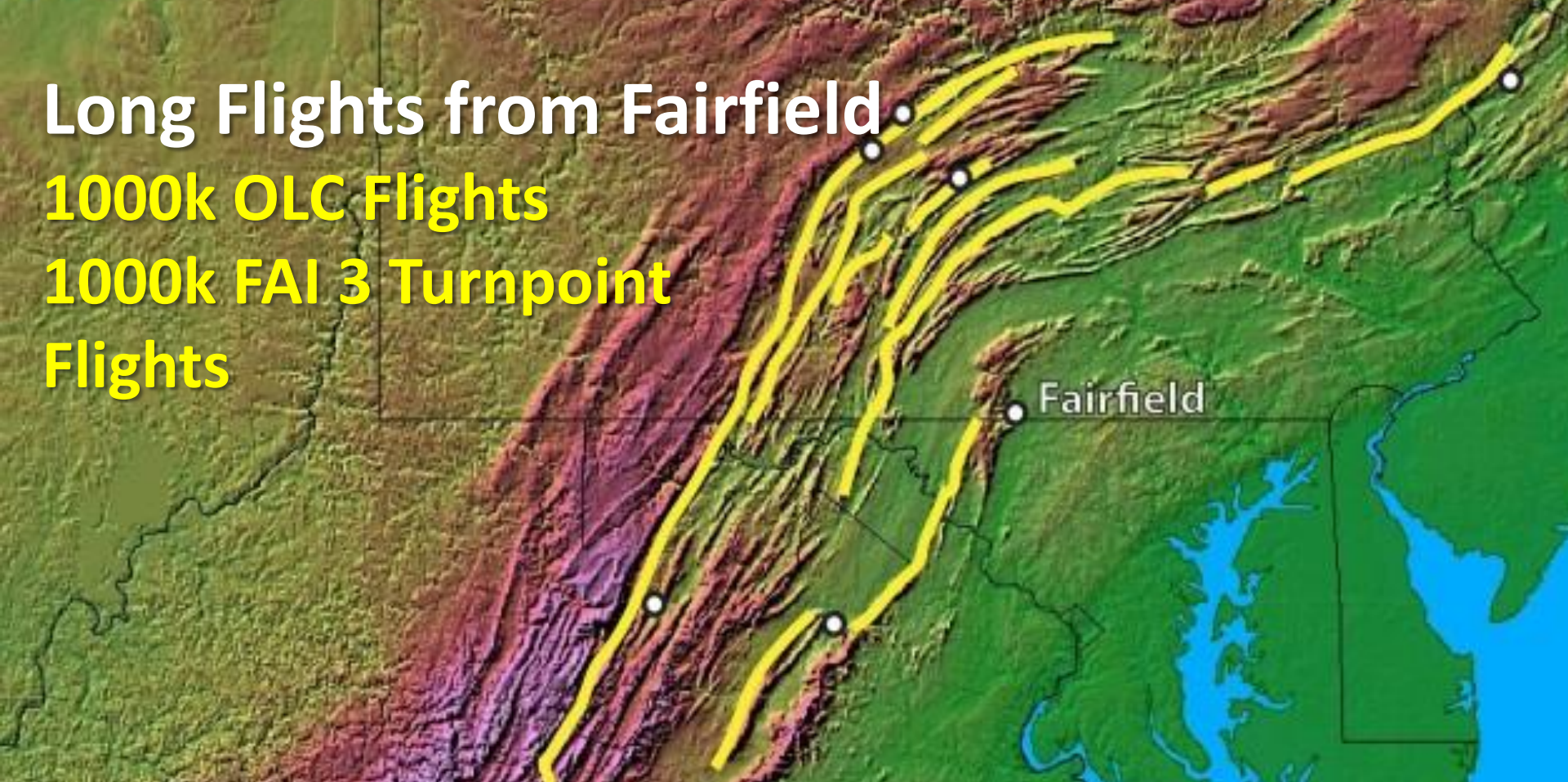
1000k FAI Triangle Flights



Long Flights from Fairfield

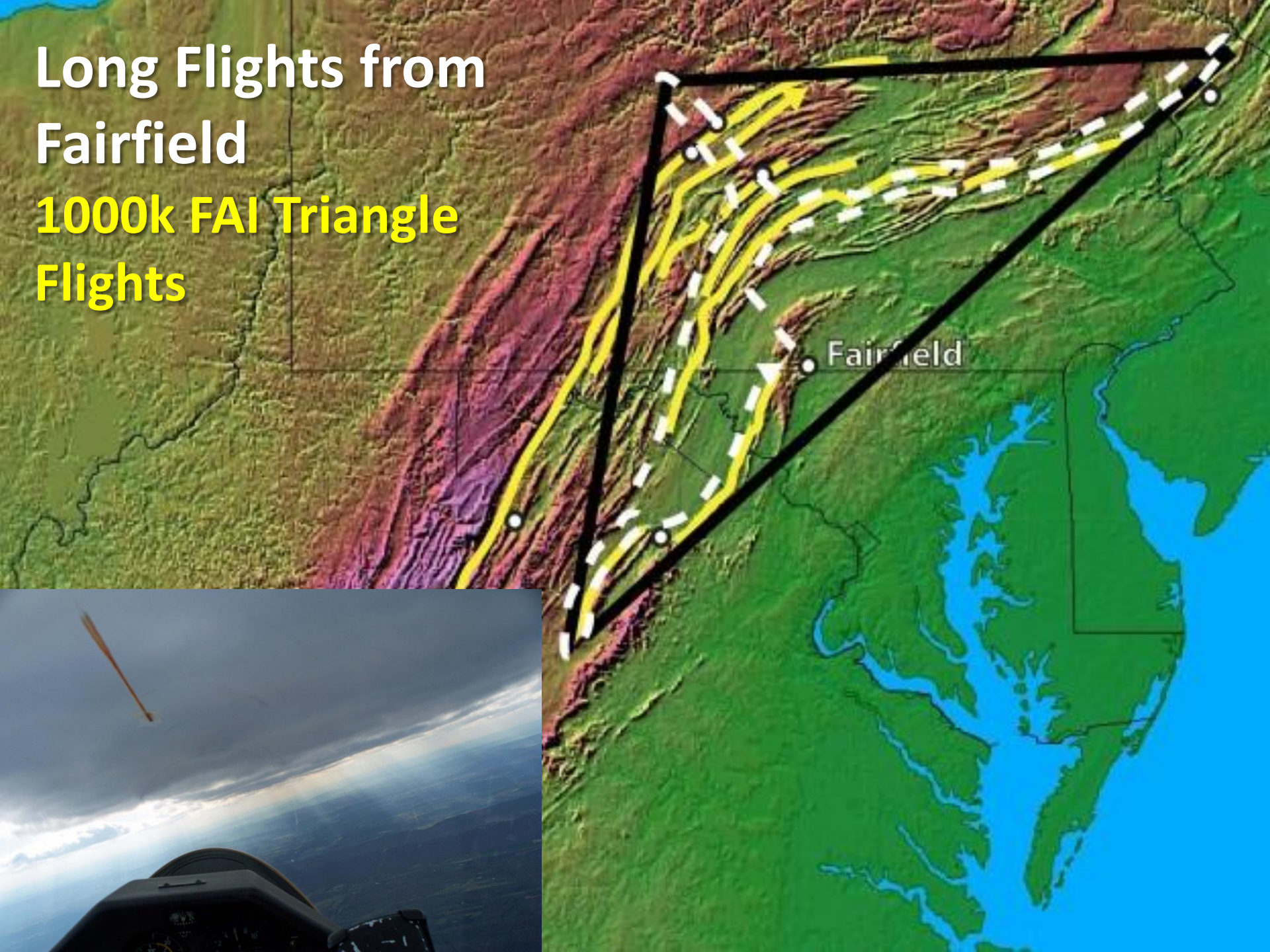
1000k OLC Flights

1000k FAI 3 Turnpoint
Flights



Long Flights from Fairfield

1000k FAI Triangle Flights



Long Flights from Fairfield Tactics...

Early starts in wave

Early starts on High Rock/Blue Ridge

Early starts under cloud streets

Late returns to Fairfield



Long Flights from Fairfield Early Starts...



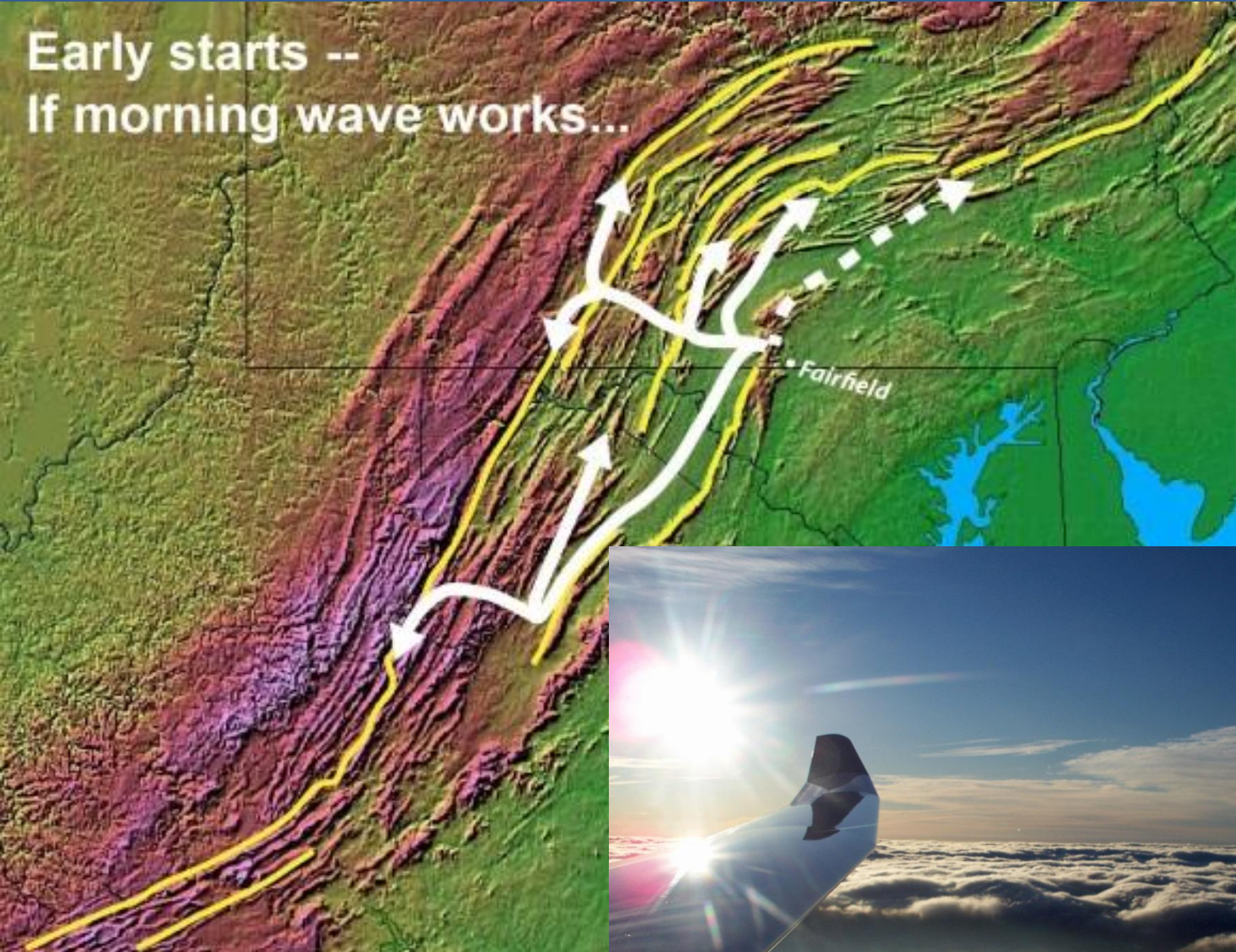
LBL

Long Flights from Fairfield Early wave tow...

Soaring
MARCH 2011 \$5.00



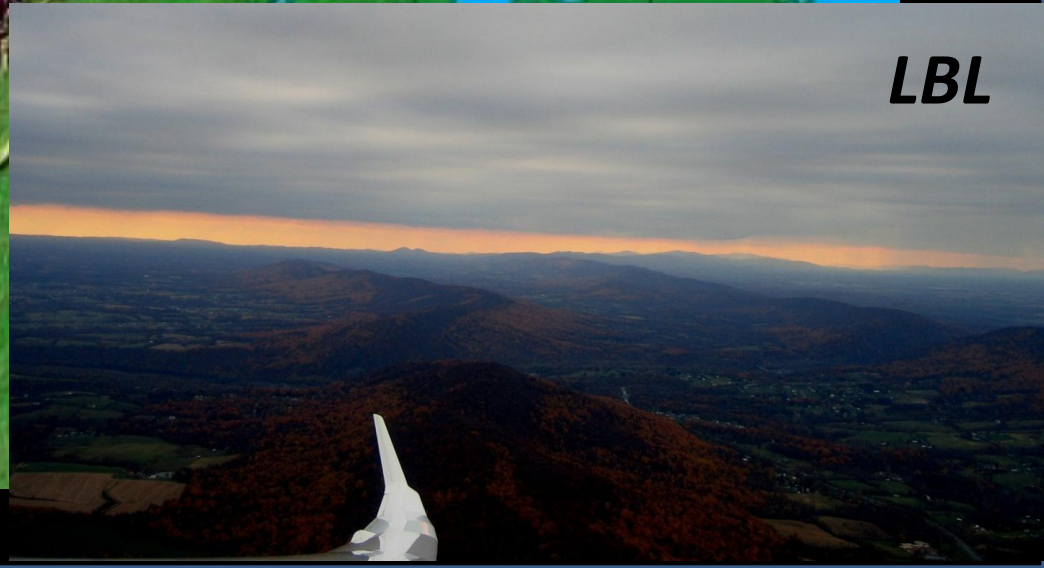
Early starts --
If morning wave works...



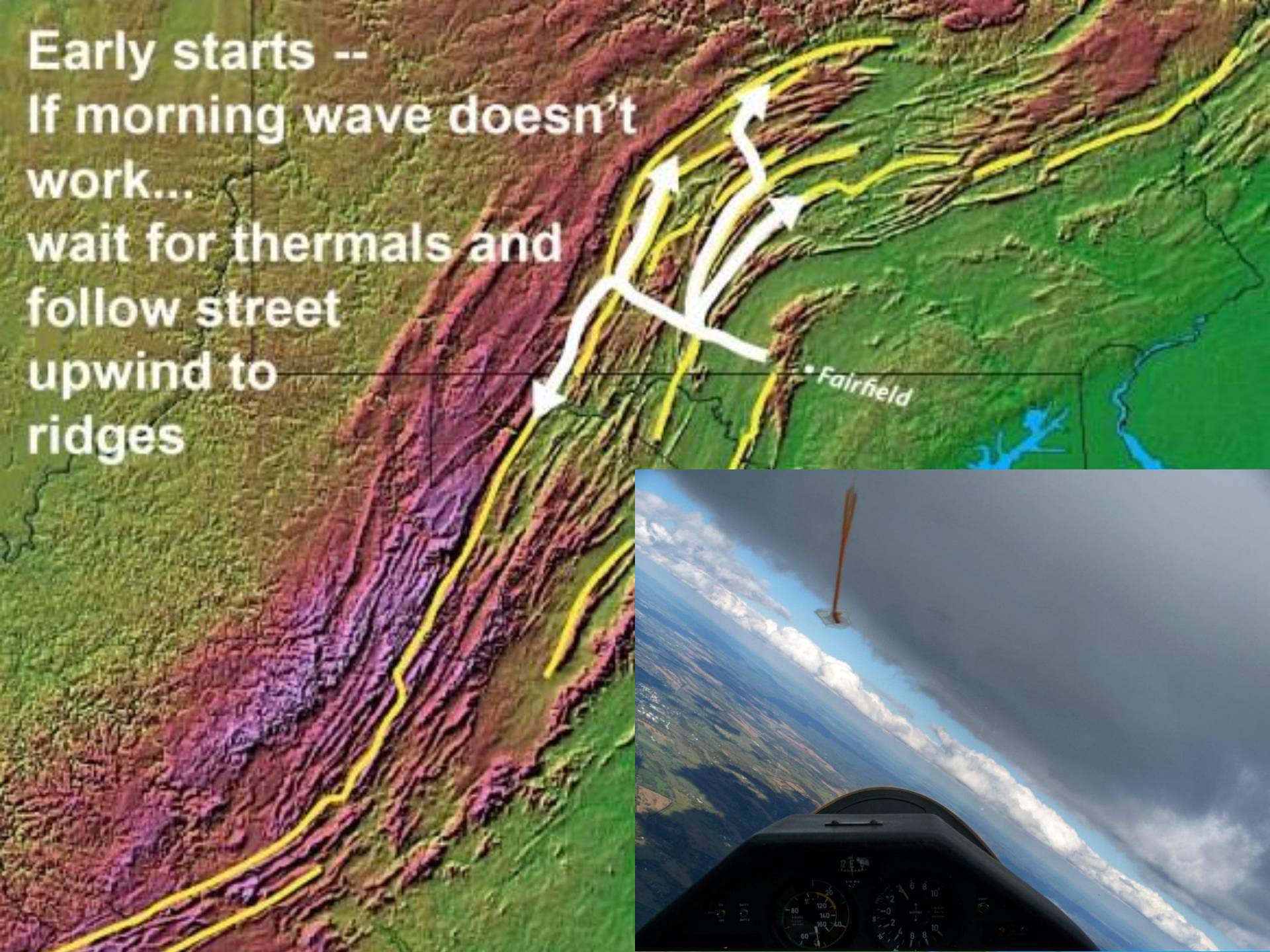
Early starts --
If morning wave doesn't work...
High Rock &
Blue Ridge



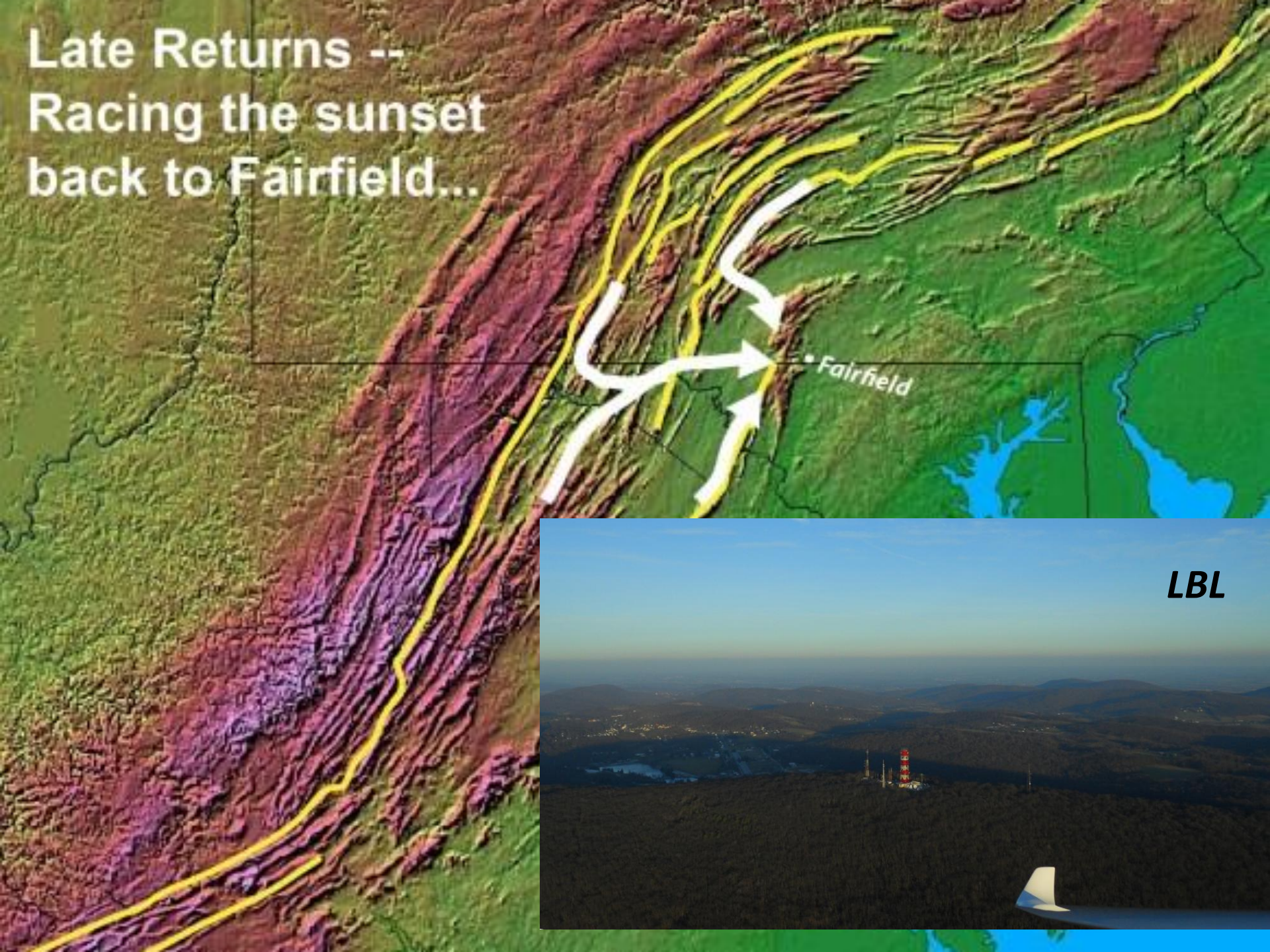
LBL



Early starts --
If morning wave doesn't
work...
wait for thermals and
follow street
upwind to
ridges



Late Returns --
Racing the sunset
back to Fairfield...



Long Duration/Distance Flying Considerations (8 – 14 hours in cockpit)

- *Fluid/Food (food & drink)*
- *Seat comfort & ergonomics*
- *Water Ballast*
- *Pee'ing*
- *Sun Protection*
- *Emergency Bag*
- *Cell Phone & Emergency Power Supply*
- *Road Maps*
- *GPS coupled ELT and SPOT Tracking*
- *Proper Mindset (accept the possibility of a multi-day retrieve; don't stress about it...)*

WM Cockpit E-Bag

- *Cell phone*
- *Cell phone recharger*
- *2 flashlights*
- *Flint/matches*
- *Multi function tool*
- *Mini hacksaw*
- *Para cord*
- *Survival blanket*
- *Pen*
- *AA batteries*
- *Mini first-aid kit*



Cold Weather Flying Considerations

- *Water ballast issues*
- *Clothing suggestions*
- *Cockpit procedures*
- *Snow/Icing risks*

January 2011 early morning Fairfield launch



Why fly in winter?...

**Great NW ridge/
wave conditions**

Strong thermals

Why not?



LBL



Cold Weather Flying Considerations

Water Ballast Issues

(Ballast is good, but in winter???)

- 1. Unable to drop ballast, landing risk*
- 2. Structural damage risk*
- 3. CG creeping aft, flight controllability risk*

ANTI-FREEZE?????



Cold Weather Flying Considerations

Clothing



Cold Weather Flying Considerations

Clothing ... Landout & night retrieval



Cold Weather Flying Considerations

Cockpit Procedures/Practices

- 1. Practice reaching and operating controls*
- 2. Take off with forward canopy vent open*
- 3. Pee'ing*
- 4. Ear plugs*
- 5. Blanket*
- 6. Emergency bag*
- 7. Hydration*



Cold Weather Flying Considerations

Snow/Icing

Canopy Frost/Ice

LBL



A Long Wave-Ridge Flight – 23 April 2014

1340km (OLC) 10 hrs 38 min task

Flight details

	Distance	Triangle
Points for the flight:	1384.33	
scoring distance:	1,242.14	142.19
Speed:	1,341.5 km	511.9 km
Duration:	128.0 km/h	48.0 km/h
Scoring class:	10:28:42	10:39:24
Index:	standard	
Club:	108.0	
Date of claim:	M-ASA Mid-Atlantic Soaring Assn	
state:	24.04.2014 02:45:44	
IGC-File:	✓	Flight: ✓

Flight path

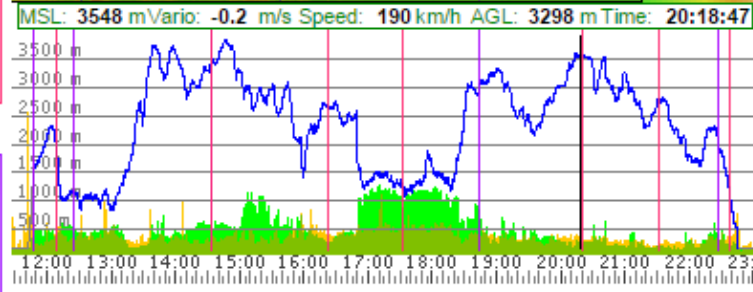
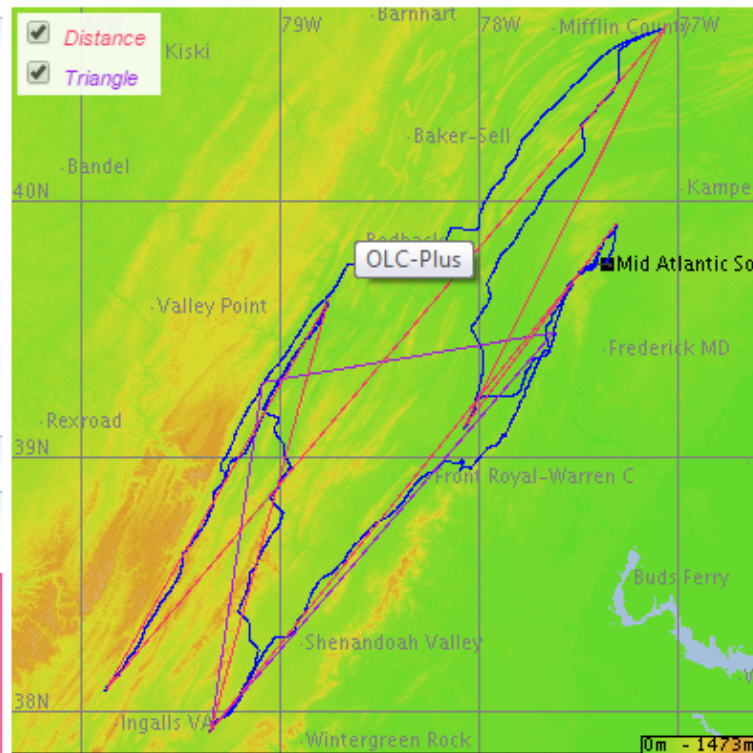
Statistics

Distance (OLC-Classic):

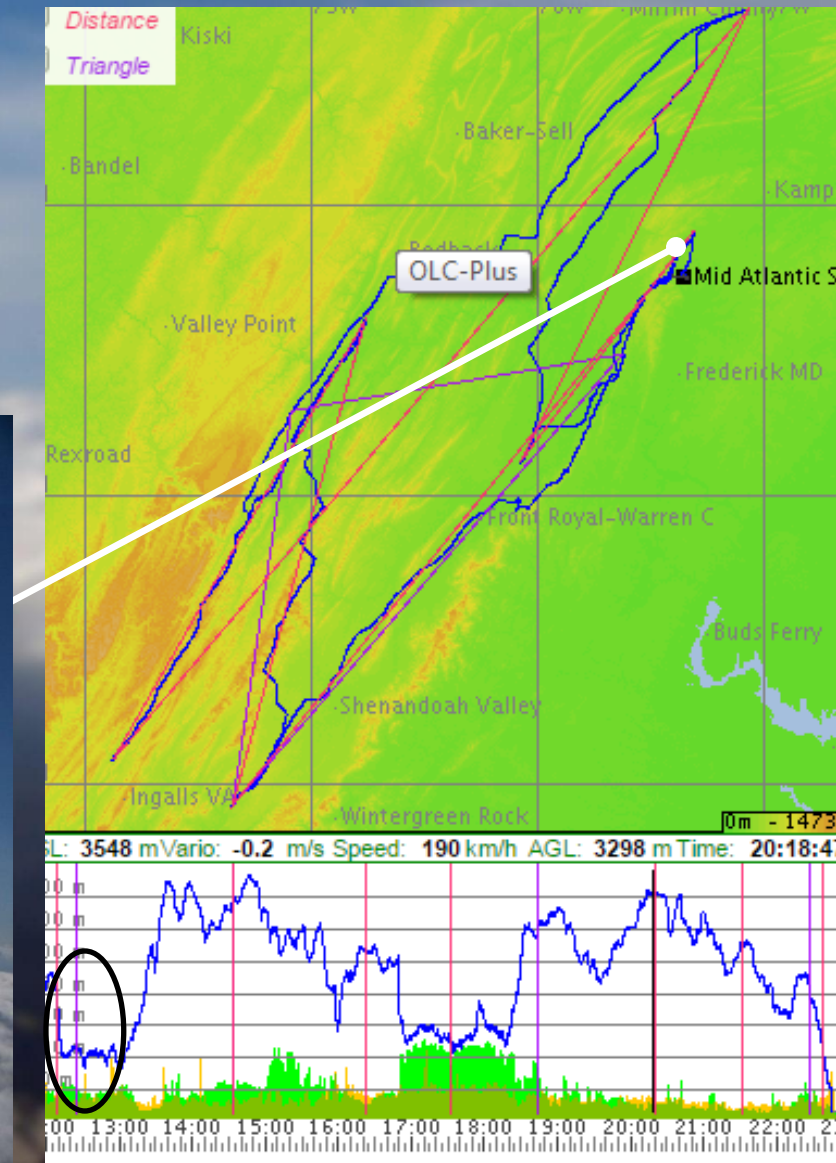
	s [km]	%Kurbel	NAufwinde	R/C [m/s]	E	V _d [km/h]
Leg1	269.45	15.11	11	1.32	892.22	111.04
Leg2	194.41	0.00	0	0.00	243.01	107.21
Leg3	195.34	0.00	0	0.00	143.42	167.91
Leg4	376.50	4.01	4	2.39	-293.91	135.27
Leg5	194.62	0.00	0	0.00	246.67	161.96
Leg6	111.19	0.00	0	0.00	68.85	102.01
Total	1341.51	4.56	15	1.57	373.99	128.03

Triangle (FAI-OLC):

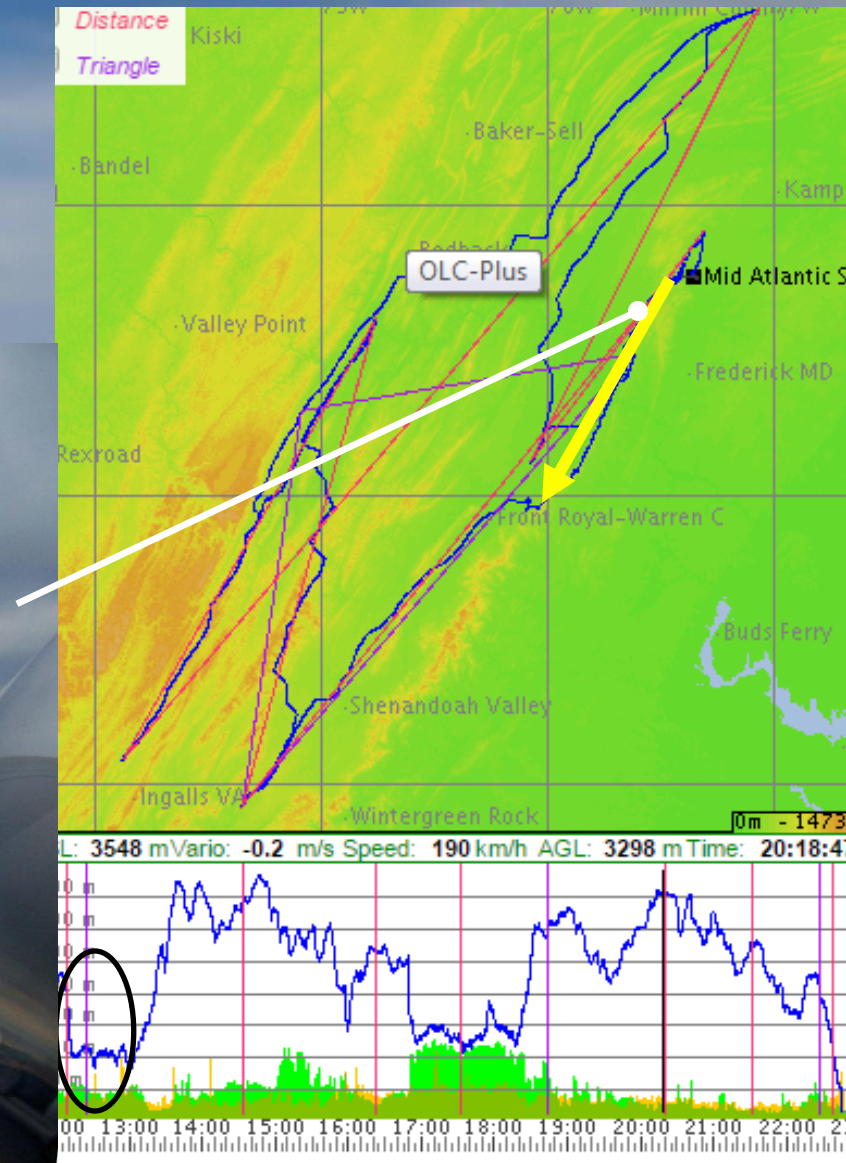
	s [km]	%Kurbel	NAufwinde	R/C [m/s]	E	V _d [km/h]
Leg1	35.83	20.33	6	0.68	49.42	57.64
Leg2	229.94	17.09	11	1.32	-406.97	107.20
Leg3	153.96	2.70	4	2.39	99.26	37.16



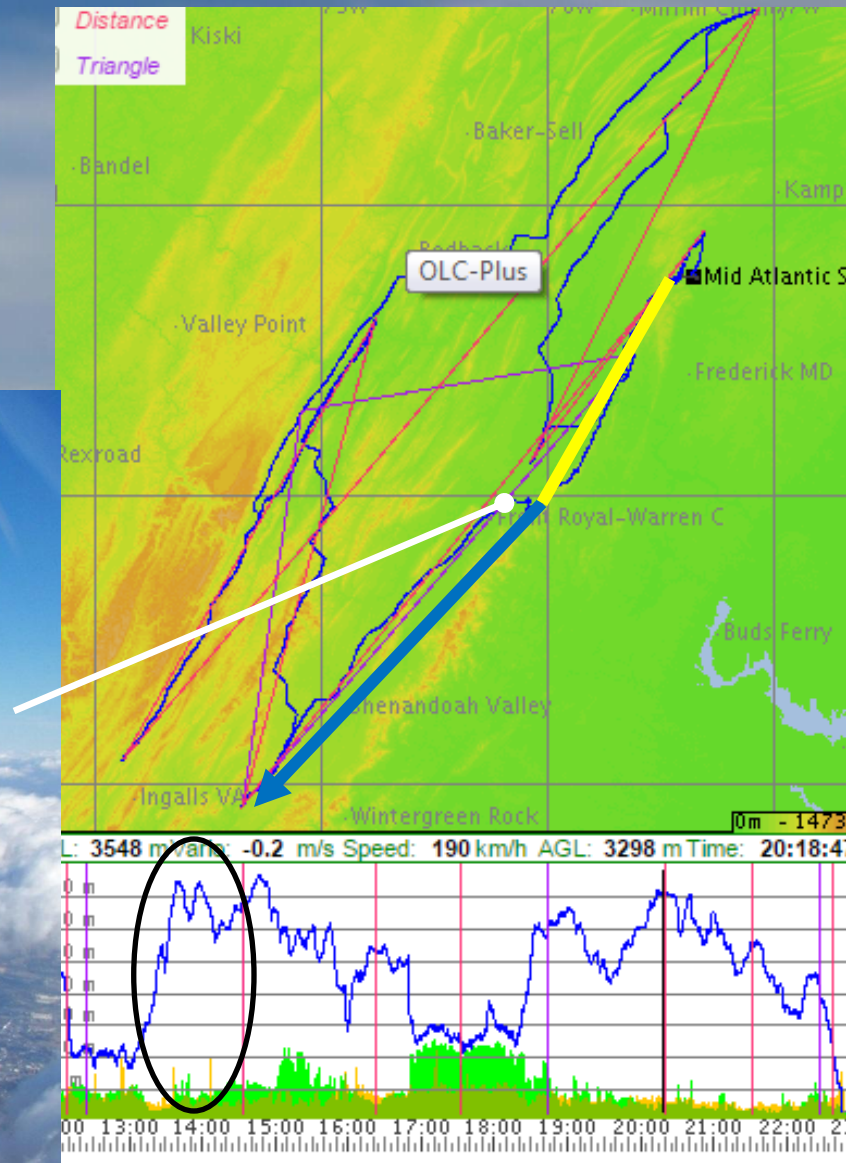
**Off Tow in Wave –
But unable to climb high
enough to cross above...**



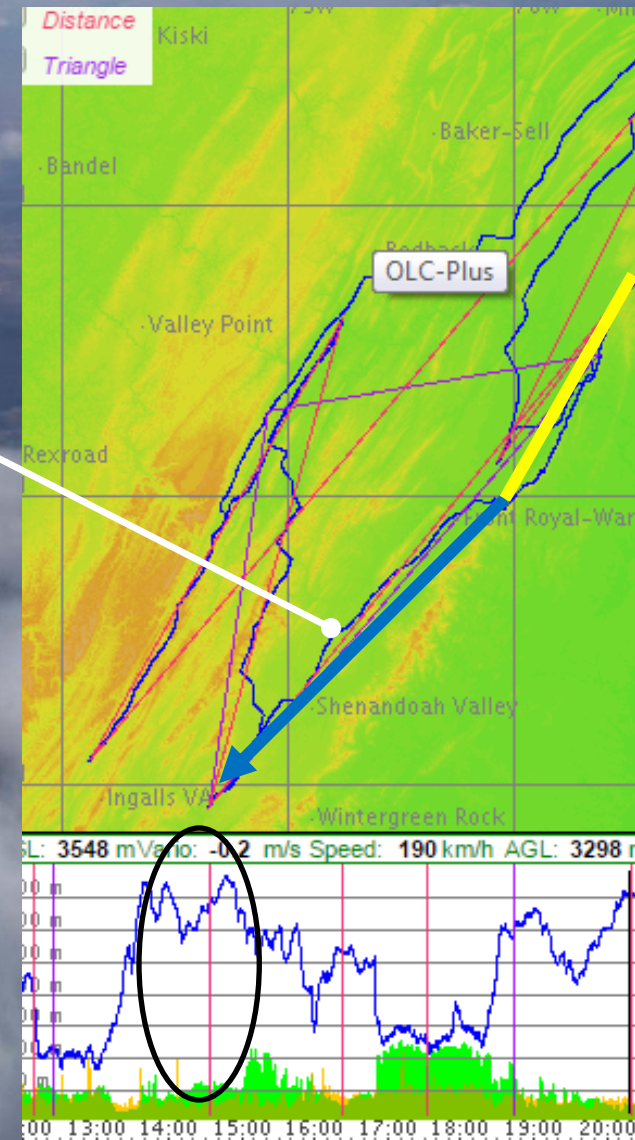
Leg 1A – Unusable Wave at Fairfield, southbound on High Rock/Blue Ridge



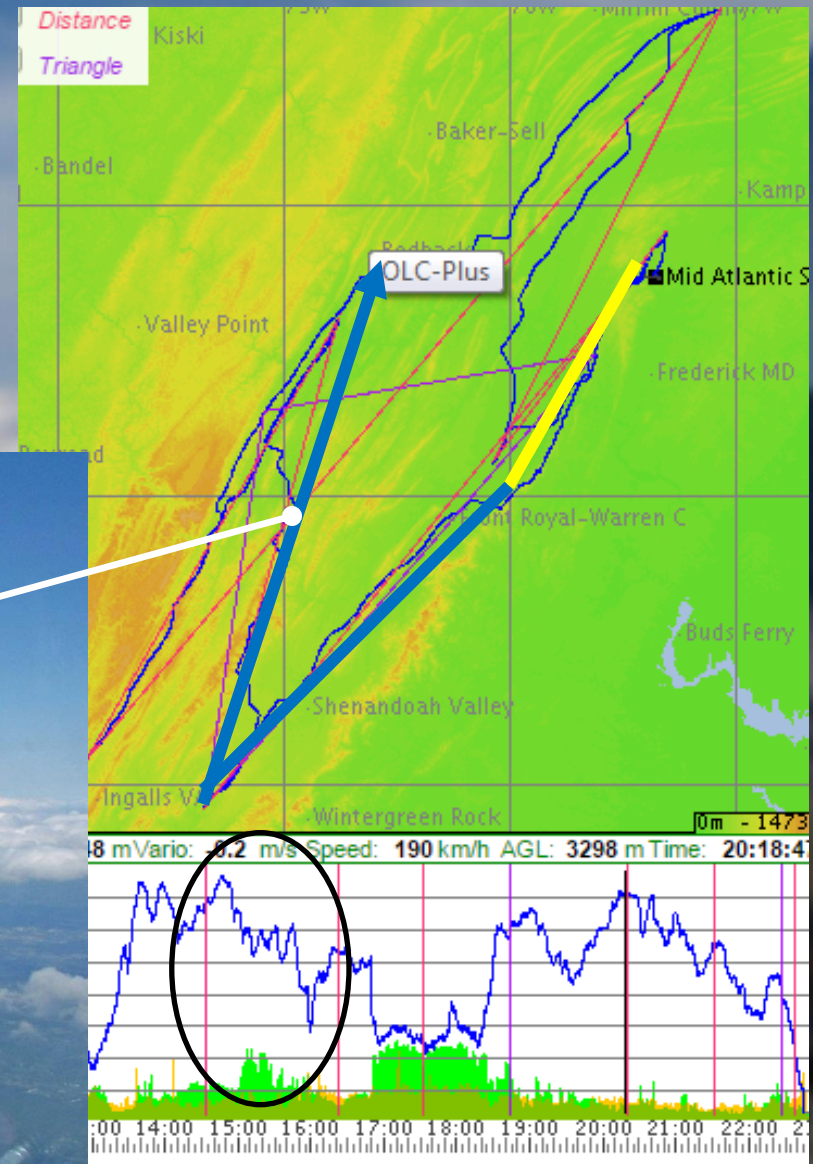
**Leg 1B – Enter Wave from
Blue Ridge, continue south
down Shenandoah Valley
in wave until blue**



Leg 1B – Passing Massanutten Peak about 10,000'.

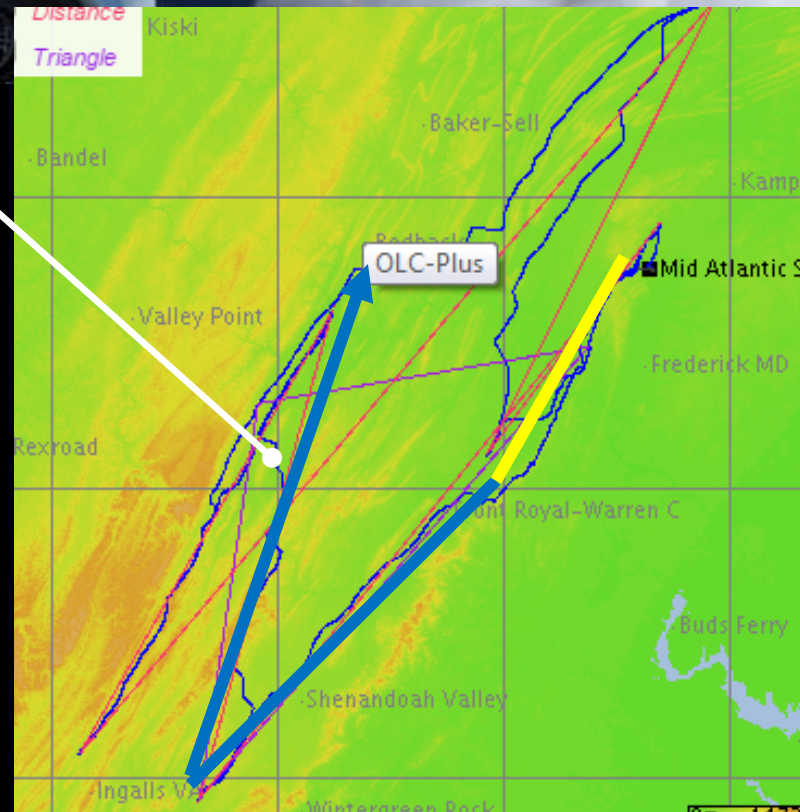


Leg 2 – Fly wave north and upwind to Main Ridge near Cumberland

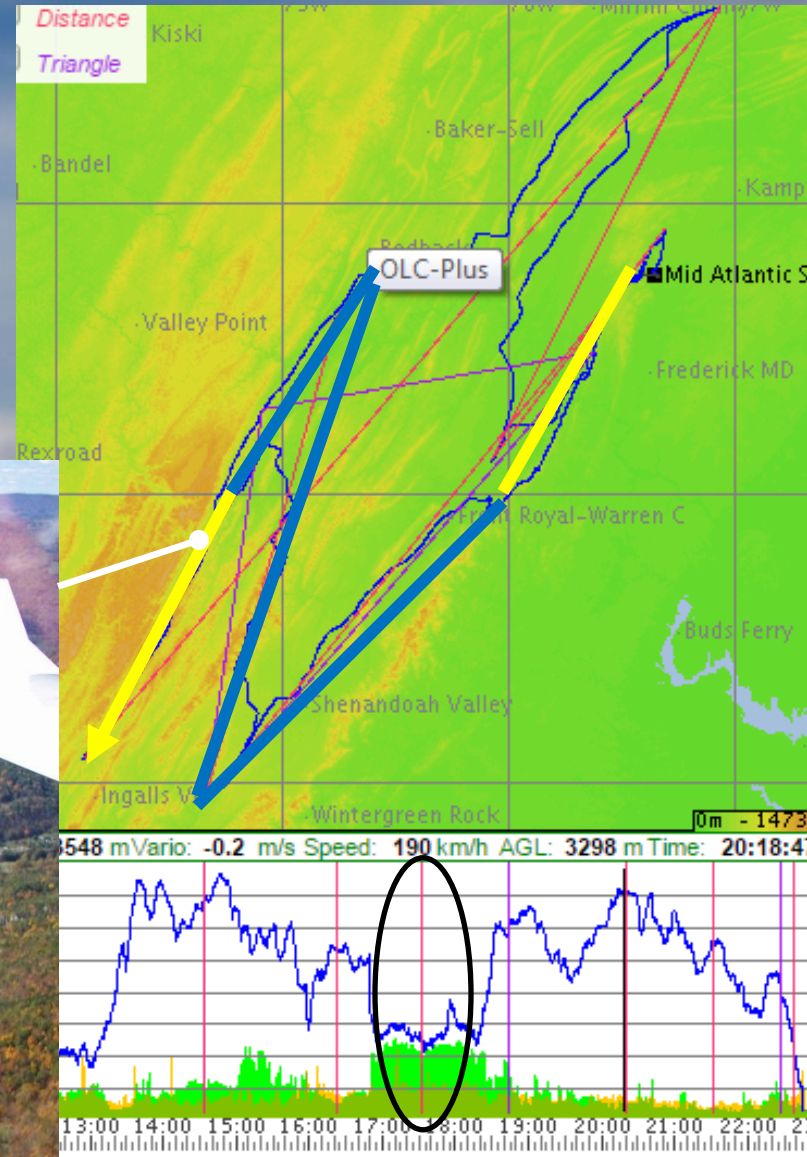




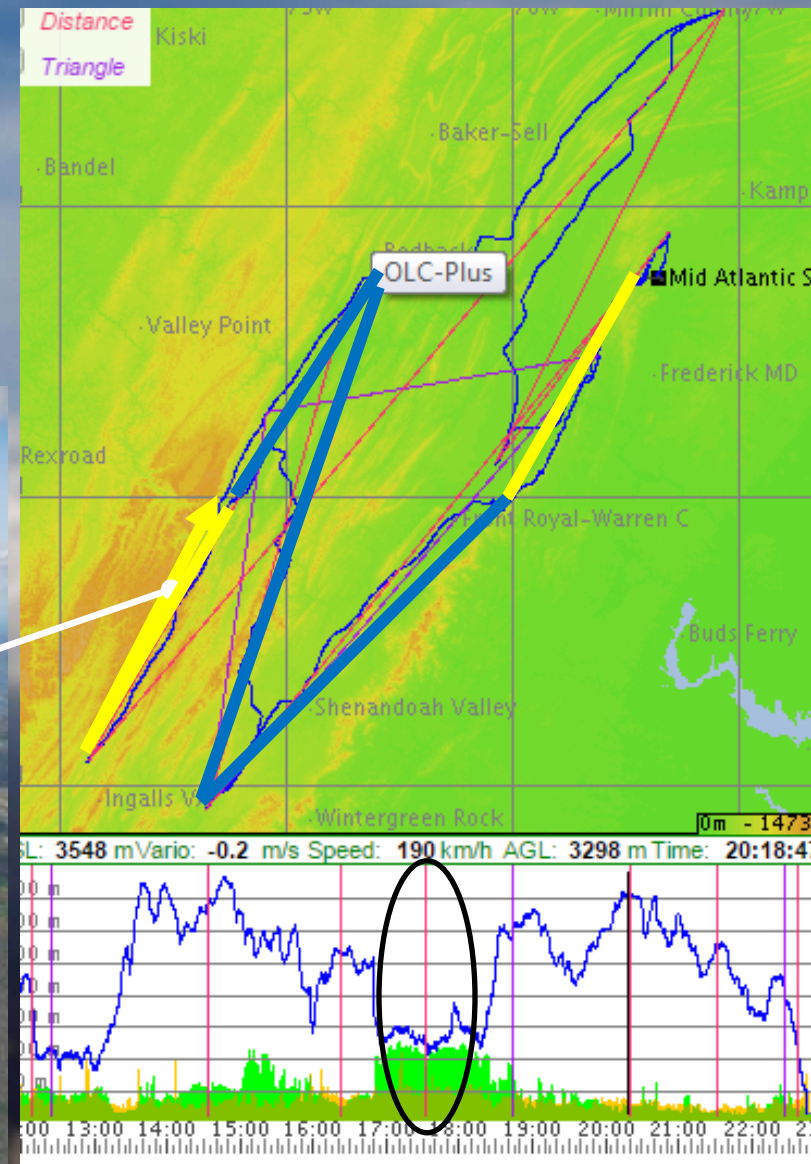
Leg 2 – Approaching Petersburg Valley and Main Ridge in wave.



**Leg 3 – Forced down from
Wave near Petersburg.
Ran Main Ridge south
to Mountain Grove.**



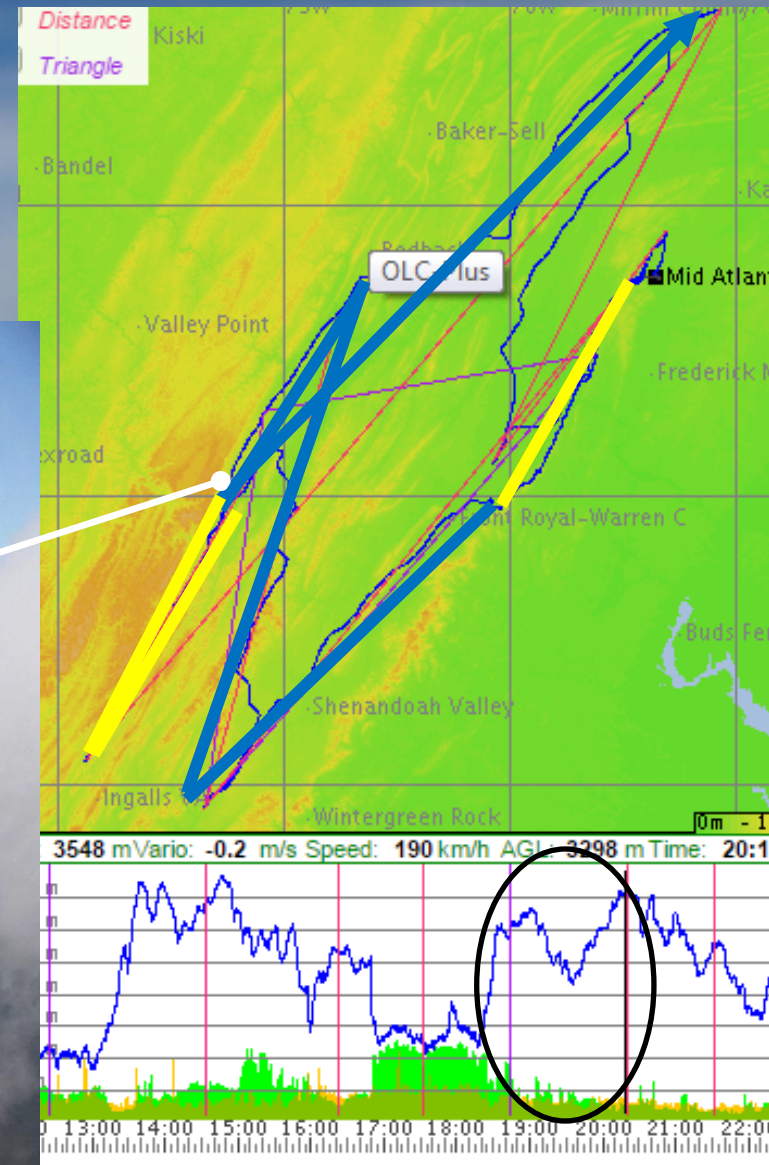
**Leg 4a – Heading back north
on Main Ridge. Snowy Mtn
behind and Seneca Rock
ahead.**



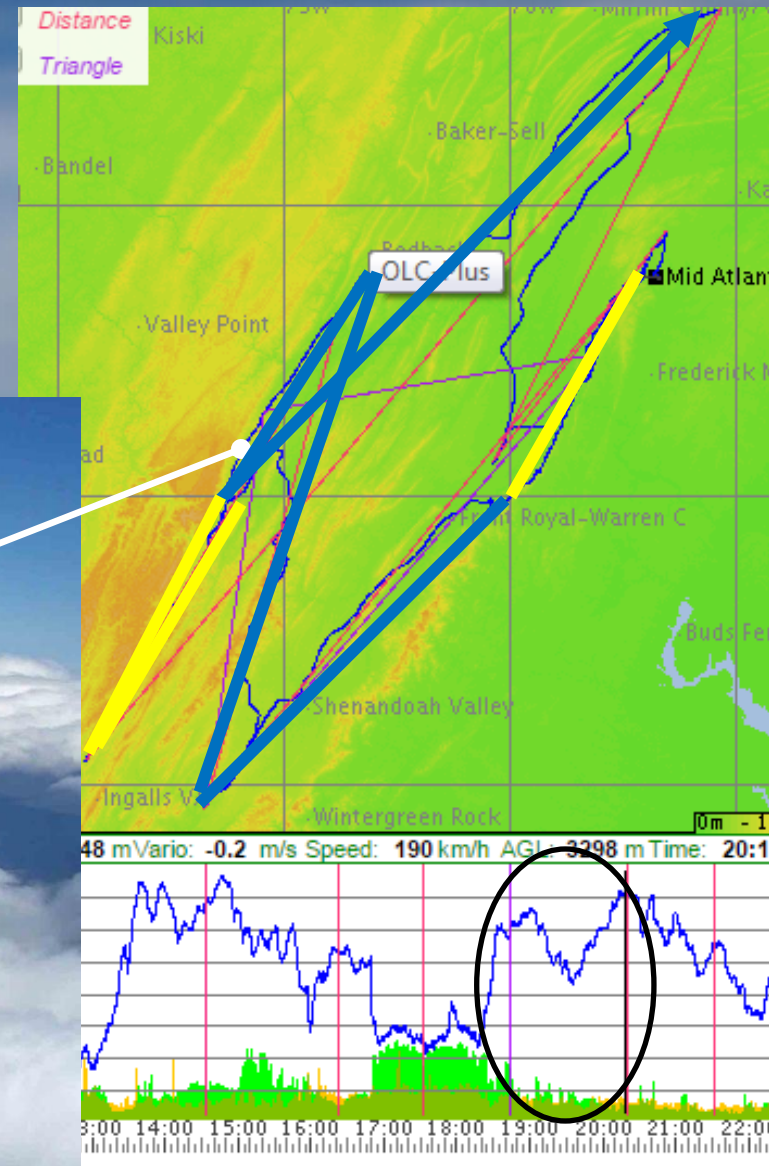
Leg 4 A-B Reenter wave near Petersburg.



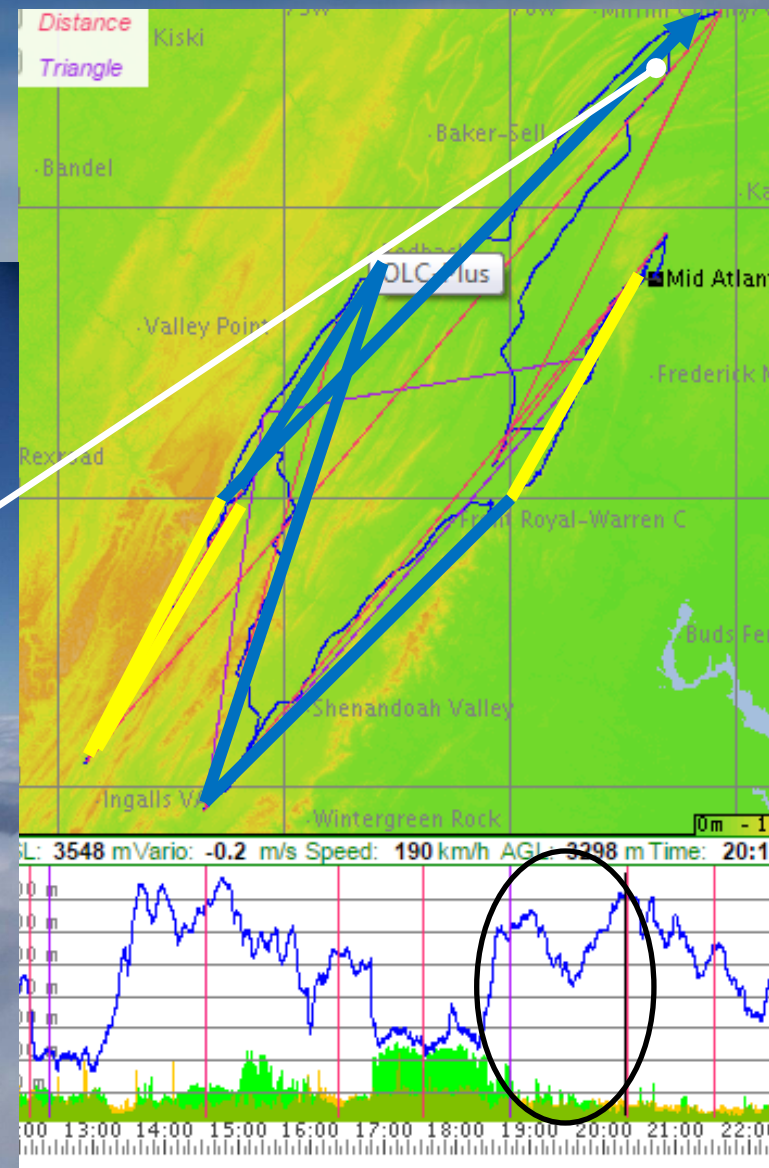
10kts initial wave lift



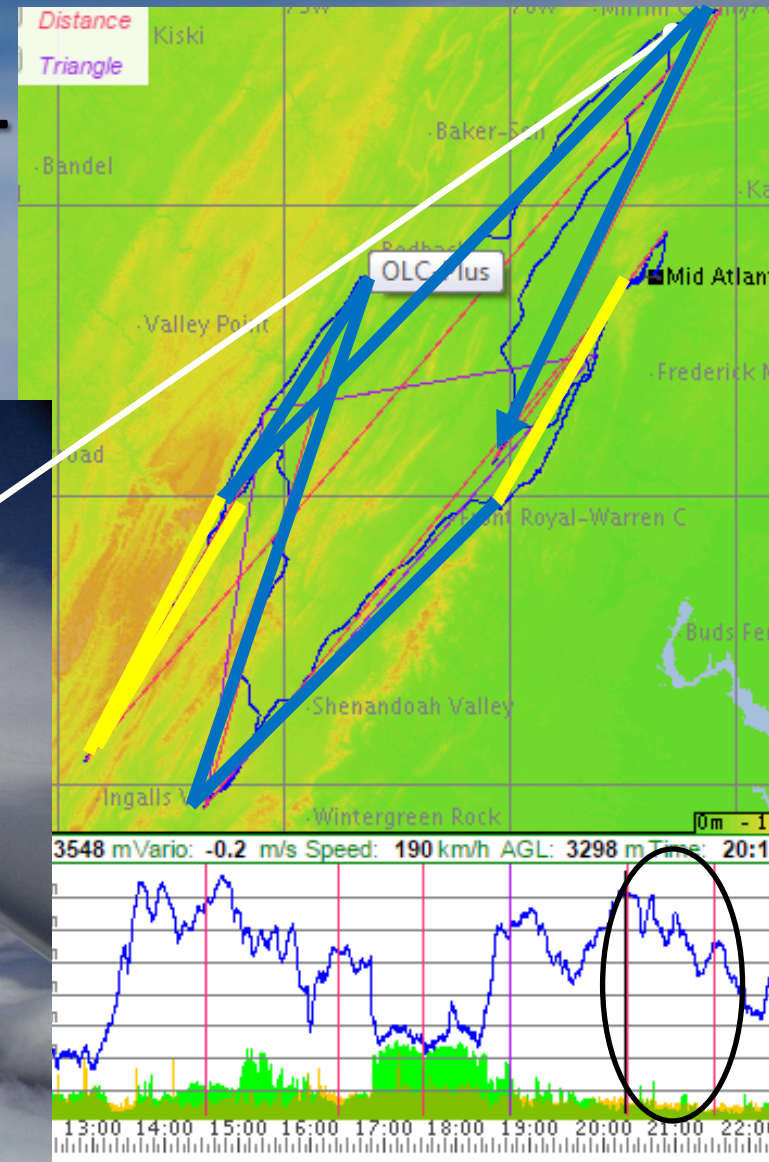
**Leg 4B -- Running primary
wave north toward
Cumberland.**



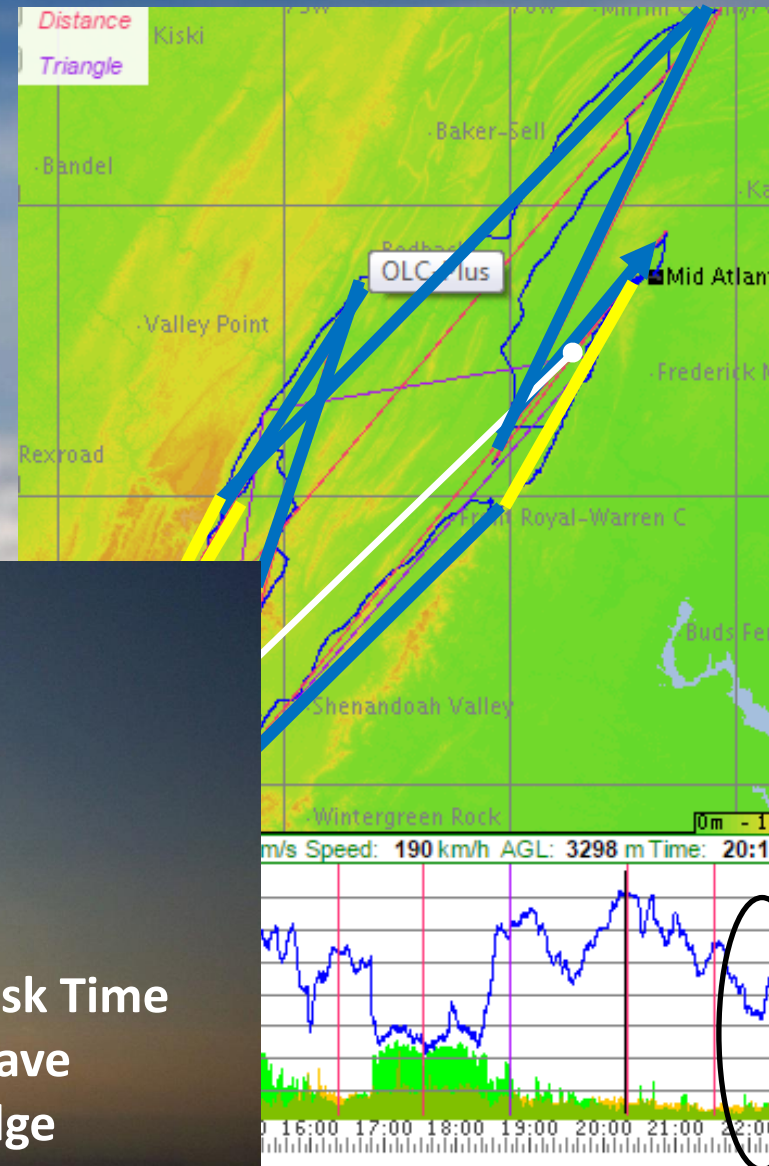
Leg 4 – Solid deck to north ends leg 4.



**Leg 5 – Back south and down-
wind in wave – starting the end-
game with beautiful lennies.**



Leg 6 – Turning for Fairfield, transitioning from wave to High Rock ridge to thermals.



Final Numbers...

1341 Km OLC Flight
10 hours 38 mins Task Time
About 1000km in wave
About 300km on ridge

Questions/Answers

Discussion

Morning climb-out in Fairfield wave