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<td>5/22/2013</td>
<td>Boulder storm researchers were near as tornado hit Moore, Oklahoma</td>
<td>Colleen O'Connor</td>
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<td>5/21/2013</td>
<td>NCAR Scientists In Boulder Study Rash Of Tornadoes In High-Tech Jet</td>
<td>znmeb (M. Edward Borasky)</td>
<td>CBS Denver - Online</td>
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<td>5/20/2013</td>
<td>Major field campaign targets improvement in thunderstorm prediction <a href="http://t.co/bBXb8iNwbG">http://t.co/bBXb8iNwbG</a></td>
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<td>New Thunderstorm Research Begins in Colorado: The National Center for Atmospheric Research (NCAR) began a mon... <a href="http://t.co/xma4epVsUP">http://t.co/xma4epVsUP</a></td>
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<td>RT @jimmyc42: @ounwcm from the CSU MPEX team: 17:15z <a href="http://t.co/ACcQ0qP1P7">http://t.co/ACcQ0qP1P7</a></td>
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<td>RT @jimmyc42: Edmond supercell proximity sounding from NSSL with 50 kt near surface southeasterly flow in the cold pool? #MPEX - <a href="http://t.co/AzJk0y5p9q">http://t.co/AzJk0y5p9q</a></td>
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<td>5/19/2013</td>
<td>Purdue researchers aim to pin-point severe weather forecasts</td>
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<td>5/18/2013</td>
<td>Purdue part of national weather project</td>
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<td>#MPEX CSU sounding for 18z : <a href="http://t.co/eyk1ODIEfl">http://t.co/eyk1ODIEfl</a></td>
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<td>RT @jimmyc42: NSSL #MPEX sounding southwest of garden city. <a href="http://t.co/Ym17ILWpPO">http://t.co/Ym17ILWpPO</a></td>
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<td>RT @jimmyc42: NSSL #MPEX sounding southwest of garden city. <a href="http://t.co/qzir8iWQk7">http://t.co/qzir8iWQk7</a> #kswx</td>
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<td>RT @NOAAResearch: Friday @NOAA Research #Haiku: Gathering data/ #MPEX gets to know the storms/ T-storm prediction <a href="http://t.co/wmfayxv90T">http://t.co/wmfayxv90T</a> @…</td>
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<td>5/18/2013</td>
<td>#MPEX morning dropsonde data available today, should be some afternoon upsondes too: <a href="http://t.co/mfxtbETZRT">http://t.co/mfxtbETZRT</a></td>
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<td>Field Study Aims to Better Severe Weather Forecasting</td>
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<td>High-Altitude Flights Conducted For Weather Forecasting Research</td>
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<td>PURDUE PART OF FIELD STUDY TO IMPROVE SEVERE WEATHER FORECASTING</td>
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<td>5/14/2013</td>
<td>Colorado weathermen take to skies for forecasts</td>
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<td>KOAA-TV - Online</td>
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<td>NCAR Scientists Get High-Flyin... <a href="http://2013/05/14/ncar-scientists-get-high-flying-new-tool-to-help-with-forecasts/?tb">http://2013/05/14/ncar-scientists-get-high-flying-new-tool-to-help-with-forecasts/?tb</a> #BOULDER #days</td>
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<td>NCAR Scientists Get High-Flyin New Tool To Help With Forecasts: BOULDER, Colo. (CBS4) – Scientists at the… <a href="http://t.co/BmWc5cFxIh">http://t.co/BmWc5cFxIh</a></td>
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<td>NCAR Scientists Get High-Flyin New Tool To Help With Forecasts</td>
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<td>NCAR experiment aims to find information to aid in avoiding big weather forecasting errors: <a href="http://t.co/Squ3EXRpZ4">http://t.co/Squ3EXRpZ4</a></td>
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<td>Colorado weathermen take to skies for forecasts</td>
<td>Northern Colorado 5 - Online</td>
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<td>Where, when will thunderstorms strike Colorado's Front Range, adjacent Great Plains?</td>
<td>Phys.org</td>
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<td>5/14/2013</td>
<td>Where, when will thunderstorms strike Colorado's Front Range, adjacent Great Plains?</td>
<td>EurekAlert!</td>
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<td>Colorado forecasters take flight to spot storms</td>
<td>Fort Collins Coloradoan - Online</td>
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<td>RT @NSSL: Thunderstorm research project #MPEX begins tomorrow. Local reporters getting briefed by NCAR scientists! <a href="http://t.co/l7C9Z1HhCB">http://t.co/l7C9Z1HhCB</a></td>
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<td>Colorado research center to use airplane to improve weather forecasts and give more warning</td>
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<td>Better forecasting of severe weather on high-altitude agenda of Boulder's NCAR</td>
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<td>High-flying experiments could help weather forecasting</td>
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<td>Predicting thunderstorms in Colorado getting help from above</td>
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<td>Colorado weathermen take to skies for forecasts</td>
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<td>Predicting thunderstorms in Colorado getting help from above</td>
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<td>RT @dailycamera: Better forecasting of severe weather on high-altitude agenda of #Boulder's NCAR <a href="http://t.co/rdErlK24IC">http://t.co/rdErlK24IC</a> via @abuvthefold #…</td>
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<td>Better forecasting of severe weather on high-altitude agenda of Boulder's NCAR</td>
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<td>MeganQuinn2 (MeganQuinn)</td>
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<td>This Gulfstream in #broomfield will take to the air soon to collect more accurate severe storm data #ncar #boulder <a href="http://t.co/LXeqWE82Va">http://t.co/LXeqWE82Va</a></td>
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<td>I'm at Research Aviation Facility - NCAR (Broomfield, CO) w/ 2 others [pic]: <a href="http://t.co/o5fV1yBLzh">http://t.co/o5fV1yBLzh</a></td>
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<td>Press conf about to start at #NCAR Aviation Facility.. #NSF funded thunderstorm research project launching May 15 <a href="http://t.co/viCm8Q0qPZ">http://t.co/viCm8Q0qPZ</a></td>
<td>MaureenMcCann 7 (Maureen McCann)</td>
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<td>MaureenMcCann 7 (Maureen McCann)</td>
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<td>5/13/2013</td>
<td>Major field campaign targets improvement in thunderstorm prediction: Multiagency study combines research fligh... <a href="http://t.co/VGgOBR7rve">http://t.co/VGgOBR7rve</a></td>
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<td>MPEX will include early-morning flights with the NSF/NCAR Gulfstream V aircraft.</td>
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<td>5/13/2013</td>
<td>Tricked out Gulfstream jet to test new storm forecast model</td>
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<td>5/13/2013</td>
<td>High-flying experiments could help weather forecasting</td>
<td>Monte WhaleyThe Denver Post</td>
<td>Denver Post - Online (press release), The</td>
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<td>5/12/2013</td>
<td>WHERE, WHEN WILL THUNDERSTORMS STRIKE COLORADO'S FRONT RANGE, ADJACENT GREAT PLAINS?</td>
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<td>Federal News Service</td>
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Russ Schumacher was about 45 miles from Moore, Okla., working on the science of predicting extreme weather, when the tornado hit Monday afternoon. "It was definitely a mixed feeling," said Schumacher, assistant professor in the Department of Atmospheric Science at Colorado State University. "We feel like the research we're doing, and..."
BOULDER, Colo. (CBS4) – The data being collected from a plane can't stop a tornado, but scientists hope it will better prepare people for what's coming their way and give them more reaction time.

The technology inside the G5 jet at the National Center for Atmospheric Research (NCAR) in Boulder has already gathered valuable data from three recent tornadoes, including the one that devastated Moore, Okla. Scientists hope the information will soon help provide better warnings for severe storms and tornadoes.

“So that the people who really have to be aware of the possibilities of a dangerous, deadly tornado in the afternoon are the ones who really get the word,” NCAR scientist Morris Wiseman said.

Scientists use the jet to measure the atmosphere early in the morning and put the data into forecast models. It's called M-Pex, or "Mesoscale Predictability Experiment." The goal is to better pinpoint storms so people know how to react to them.

“To determine how possible is it to predict say six to 24 hours ahead of time, that this part of a state, or these couple of counties might be affected by tornadoes,” NCAR scientist Robert Henson said.

That would also affect tornado warnings, potentially giving people an hour's notice rather than the current 15 to 20 minutes of lead time.

“We would argue that it's still not enough, but that's a huge improvement over what it was 20 years ago,” Wiseman said.

The plane’s mission will last a month, but the data could last a lifetime, so people can get ahead of deadly storms. The data will take scientists about a year or two to analyze and authenticate before they know if it will affect the advance warnings systems.
Major field campaign targets improvement in thunderstorm prediction
http://t.co/bBXj8iNwbG

Date: 5/20/2013 5:47:08 PM
Media Contact: znmeb (M. Edward Borasky)
Media Outlet: Twitter
Attachment Link: http://twitter.com/znmeb/statuses/336598994690121728
New Thunderstorm Research Begins in Colorado: The National Center for Atmospheric Research (NCAR) began a mon... http://t.co/xma4epVsUP
RT @jimmymc42: @ounwcm from the CSU MPEX team: 17:15z http://t.co/ACcQOqP1P7

Date: 5/20/2013 2:36:10 PM
Media Contact: cschultzwx (Chris Schultz)
Media Outlet: Twitter
Attachment Link: http://twitter.com/cschtultzwx/statuses/336550937114058752
@ounwcm from the CSU MPEX team: 17:15z http://t.co/ACcQo1P7

Date: 5/20/2013 2:35:47 PM
Media Contact: jimmyc42 (james correia jr)
Media Outlet: Twitter
Attachment Link: http://twitter.com/jimmyc42/statuses/336550838073958400

@ounwcm from the CSU MPEX team: 17:15z http://t.co/ACcQo1P7
The National Center for Atmospheric Research (NCAR) began a month-long test last week aimed at better predicting when and where thunderstorms might tear their way across Colorado's Front Range and adjacent Great Plains...
Headline: RT @jimmyc42: Edmond supercell proximity sounding from NSSL with 50 kt near surface southeasterly flow in the cold pool? #MPEX - http://t.…

Date: 5/20/2013 7:58:17 AM

Media Contact: cshultzwx (Chris Schultz)

Media Outlet: Twitter

Attachment Link: http://twitter.com/cshultzwx/statuses/336450802975653888

RT @jimmyc42: Edmond supercell proximity sounding from NSSL with 50 kt near surface southeasterly flow in the cold pool? #MPEX - http://t…
Purdue researchers aim to pin-point severe weather forecasts

...which severe weather will strike. Same-day forecasts detail the probability of severe weather, but researchers thus far have been unable to pinpoint when and where that severe weather will hit within a given area. Also involved in the project are the National Center for Atmospheric Research, Colorado State University, the University at Albany, the State University of New York, the University of Wisconsin-Milwaukee and NOAA's National Severe Storms Laboratory. The Purdue...
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Headline: #MPEX CSU sounding for 18z: http://t.co/eyk1ODiEfI

Date: 5/18/2013 3:38:55 PM

Media Contact: jimmyc42 (james correia jr)

Media Outlet: Twitter

Attachment Link: http://twitter.com/jimmyc42/statuses/335841953356861440

#MPEX CSU sounding for 18z: http://t.co/eyk1ODiEfI
RT @jimmyc42: NSSL #MPEX sounding southwest of garden city. http://t.co/Ym17LWpPO

Date: 5/18/2013 2:00:03 PM

Media Contact: Derrick_Snyder (Derrick Snyder)

Media Outlet: Twitter

Attachment Link: http://twitter.com/Derrick_Snyder/statuses/335817072217030657
RT @jimmyc42: NSSL #MPEX sounding southwest of garden city. http://t.co/qzir8iWQk7 #kswx

Date: 5/18/2013 1:57:46 PM
Media Contact: ounwcm (Rick Smith)
Media Outlet: Twitter
Attachment Link: http://twitter.com/ounwcm/statuses/335816497870024704

RT @jimmyc42: NSSL #MPEX sounding southwest of garden city. http://t.co/qzir8iWQk7 #kswx
RT @jimmyc42: NSSL #MPEX sounding southwest of garden city. http://t.co/Ym17lLWpPO

Date: 5/18/2013 1:57:40 PM

Media Contact: svrwxtweets (Rob White)

Media Outlet: Twitter

Attachment Link: http://twitter.com/svrwxtweets/statuses/335816472150556673
Headline: NSSL #MPEX sounding southwest of garden city. http://t.co/Ym17ILWpPO

Date: 5/18/2013 1:54:45 PM

Media Contact: jimmyc42 (james correia jr)

Media Outlet: Twitter

Attachment Link: http://twitter.com/jimmyc42/statuses/335815735244881922

NSSL #MPEX sounding southwest of garden city. http://t.co/Ym17ILWpPO
Headline: RT @NOAAResearch: Friday @NOAA Research #Haiku: Gathering data/ #MPEX gets to know the storms/ T-storm prediction http://t.co/wmfayxv90T @…

Date: 5/18/2013 1:30:13 PM

Media Contact: morganabigail (morganabigail)

Media Outlet: Twitter

Attachment Link: http://twitter.com/morganabigail/statuses/335809562219266048

RT @NOAAResearch: Friday @NOAA Research #Haiku: Gathering data/ #MPEX gets to know the storms/ T-storm prediction http://t.co/wmfayxv90T @…
The Gulfstream V ready to take off on a mission to study Tropical Storm Gaston. During the PREDICT field project NCAR researchers convened in St. Croix, U.S. Virgin Islands, to investigate tropical cyclogenesis (how tropical cyclones develop and strengthen), one of the most challenging aspects of atmospheric science. The scientists used the Gulfstream V research...
RT @NOAAResearch: Friday @NOAA Research #Haiku: Gathering data/ #MPEX gets to know the storms/ T-storm prediction http://t.co/wmfayxv90T @…

Date: 5/18/2013 1:03:53 PM
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Media Outlet: Twitter
Attachment Link: http://twitter.com/NSSL/statuses/335802937219612672

RT @NOAAResearch: Friday @NOAA Research #Haiku: Gathering data/ #MPEX gets to know the storms/ T-storm prediction http://t.co/wmfayxv90T @…
#MPEX morning dropsonde data available today, should be some afternoon upsondes too: http://t.co/mfxtbETZRT

Date: 5/18/2013 9:58:41 AM

Media Contact: jimmyc42 (james correia jr)

Media Outlet: Twitter

Attachment Link: http://twitter.com/jimmyc42/statuses/335756328087724032

#MPEX morning dropsonde data available today, should be some afternoon upsondes too: http://t.co/mfxtbETZRT
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Date: 5/17/2013 3:46:52 PM

Media Contact: SeaGrant (NOAA Sea Grant)

Media Outlet: Twitter

Attachment Link: http://twitter.com/SeaGrant/statuses/335481564890791938

RT @NOAAResearch: Friday @NOAA Research #Haiku: Gathering data/ #MPEX gets to know the storms/ T-storm prediction http://t.co/wmfayxv90T @…
...cruise at 40,000 feet for up to six hours to sample the prestorm atmosphere and canvass for triggers of severe weather across Colorado and nearby states. On each day of operations, MPEX will produce an ensemble of up to 30 forecasts using the NCAR-based research version of the multiagency Weather Research and Forecasting model, WRF-ARW. The MPEX team will also evaluate how much the data from research flights improves forecasts in two other modeling systems, both of...
National Science Foundation Gulfstream V To Fly In Support Of MPEX Program  
To better predict where and when spring thunderstorms rip across Colorado’s Front Range and the adjacent Great Plains, researchers have launched a major field project this week with high-flying aircraft and fine-grained computer simulations. The month-long study could point the way to major improvements in lead times...
WEST LAFAYETTE, Ind., May 16 -- Purdue University issued the following news release:

Purdue University professors and students will intercept storms as part of a major field project to improve predictions of severe weather and offer earlier warnings to those in its path.

Purdue professors of earth, atmospheric and planetary sciences Jeff Trapp and Michael Baldwin, and graduate students Joe Woznicki and Logan Dawson are part of the National Science Foundation-funded Mesoscale Predictability Experiment, or MPEX. The project runs from May 15 to June 15 across the Great Plains.

Currently, same-day forecasts note the likelihood of severe storms, but are uncertain where and when the storms will develop. The MPEX study will help determine whether additional detailed observations can lead to more specific forecasts of storm location and behavior as much as a day in advance.

The Purdue team is leading a portion of the project that will release weather balloons around active thunderstorms. The balloons will carry small instrument packages called radiosondes to continuously measure temperature, humidity, pressure and winds as the balloon rises. This information will be combined with earlier atmospheric measurements using similar instrument packages dropped from an aircraft at high altitudes.

These measurements will reveal how much the storms have changed or disturbed the surrounding atmosphere, said Trapp, who is one of four lead investigators for the MPEX project.

"The project has its roots in chaos theory and the related idea about how the 'flapping of a butterfly's wings could cause the formation of a tornado in Texas,' " he said. "We are trying to see if thunderstorms create an identifiable ripple effect, and, if they do, how we can use that information to better predict the weather."

The team is particularly interested in "supercell" thunderstorms, the intense and long-lasting storms most likely to produce tornadoes. These thunderstorms have strong vertical air currents that move warm air up and cool air down, as well as strong rotations that mix the atmosphere horizontally.

"We know that even isolated, short-lived thunderstorms influence their environment," he said. "Through this field study we will quantify the magnitude and extent of these warming and mixing effects on the atmosphere."

A project goal is to help improve forecasts in the 6- to 24-hour period. Currently severe weather warnings from the National Weather Service provide up to an hour's notice of tornadoes and other threats on a county-by-county basis. Tornado and severe thunderstorm watches are issued up to eight hours in advance and cover state-sized areas; while convective outlooks highlight the risk of severe weather up to
eight days in advance across large parts of the country.

In addition to Purdue University, institutions involved in the project include the National Center for Atmospheric Research (NCAR); Colorado State University; the University at Albany, State University of New York; the University of Wisconsin-Milwaukee; and NOAA's National Severe Storms Laboratory (NSSL).

Advanced forecast models can now simulate the weather at points packed as closely as about a half-mile from each other, which allows showers and thunderstorms to be explicitly depicted. However, these experimental models and those used for operational weather prediction still struggle at times to map out storm behavior, especially beyond about six hours in advance.

Scientists believe this may largely be because the models need more detail on upper-level features, such as pockets of strong wind or dry air, located several miles above ground level. As these features move into the Plains, they can be critical for triggering or suppressing severe storms. Weather satellites may not see these features, and they often go undetected by limited surface and upper-air networks across the Rocky Mountain states.

"The structure of the atmosphere two to six miles above sea level is incredibly important," said NCAR scientist Morris Weisman, another of the project's four principal investigators. "This appears to be where the biggest forecast errors develop, so we need to collect more data at these heights."

MPEX includes flights of the specially instrumented NSF/NCAR Gulfstream V aircraft, also known as the High-performance Instrumented Airborne Platform for Environmental Research. The aircraft will cruise at 40,000 feet for up to six hours to sample the prestorm atmosphere and canvass for triggers of severe weather across Colorado and nearby states.

On each day of operations, MPEX will produce an ensemble of up to 30 forecasts using the NCAR-based research version of the multiagency Weather Research and Forecasting model, WRF-ARW. The MPEX team will also evaluate how much the data from research flights improves forecasts in two other modeling systems, both of which are updated each hour. For any query with respect to this article or any other content requirement, please contact Editor at htsyndication@hindustantimes.com

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NCAR Scientists Get High-Flyin... http://2013/05/14/ncar-scientists-get-high-flying-new-tool-to-help-with-forecasts/?tb #BOULDER

Date: 5/15/2013 9:51:16 AM

Media Contact: MissouriSent (Missouri Sentinel)
Media Outlet: Twitter
Attachment Link: http://twitter.com/MissouriSent/statuses/334667296897380352

NCAR Scientists Get High-Flyin... http://2013/05/14/ncar-scientists-get-high-flying-new-tool-to-help-with-forecasts/?tb #BOULDER
NCAR Scientists Get High-Flyin... http://2013/05/14/ncar-scientists-get-high-flying-new-tool-to-help-with-forecasts/?tb #BOULDER #LINK

Date: 5/15/2013 9:51:07 AM
Media Contact: WVirginiaSent (W Virginia Sentinel)
Media Outlet: Twitter
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NCAR Scientists Get High-Flyin... http://2013/05/14/ncar-scientists-get-high-flying-new-tool-to-help-with-forecasts/?tb #BOULDER #LINK
To help better predict where and when spring thunderstorms will rip across Colorado's Front Range and the adjacent High Plains, researchers are launching a major field project this week with high-flying aircraft and fine-grained computer simulations. The month-long study could point the way toward major improvements in weather...
...Albany, State University of New York; Purdue University; the University of Wisconsin--Milwaukee; and NOAA’s National Severe Storms Laboratory (NSSL). The project will include early morning flights with the NSF/NCAR Gulfstream V aircraft (also known as HIAPER, the High-performance Instrumented Airborne Platform for Environmental Research) to sample the pre-storm atmosphere across Colorado and nearby states. In MPEX, the aircraft will cruise at 40,000 feet for up to six hours, which will enable researchers...
BOULDER, Colo. (AP) - The National Center for Atmospheric Research in Boulder is taking to the skies in airplane to see whether it can collect enough information over the Colorado Rockies to provide additional warning time to people who may be in the way...
NCAR Scientists Get High-Flyin... http:/2013/05/14/ncar-scientists-get-high-flying-new-tool-to-help-with-forecasts/?tb #BOULDER #days

Date: 5/14/2013 10:45:15 PM

Media Contact: AlabamaSentinel (Alabama Sentinel)

Media Outlet: Twitter

Attachment Link: http://twitter.com/AlabamaSentinel/statuses/334499690924105728

NCAR Scientists Get High-Flyin... http:/2013/05/14/ncar-scientists-get-high-flying-new-tool-to-help-with-forecasts/?tb #BOULDER #days
NCAR Scientists Get High-Flying New Tool To Help With Forecasts: BOULDER, Colo. (CBS4) – Scientists at the... http://t.co/BmWc5cFxIH
NCAR's G-5 aircraft (credit: CBS)   BOULDER, Colo. (CBS4) – Scientists at the National Center for Atmospheric Research in Boulder are heading up a project to help improve forecasts for severe weather in...
Headline: NCAR experiment aims to find information to aid in avoiding big weather forecasting errors: http://t.co/Squ3EXRpZ4

Date: 5/14/2013 3:10:52 PM

Media Contact: CUCleantech (CU Cleantech)

Media Outlet: Twitter

Attachment Link: http://twitter.com/CUCleantech/statuses/334385341446356992

NCAR experiment aims to find information to aid in avoiding big weather forecasting errors: http://t.co/Squ3EXRpZ4
BOULDER, Colo. (AP) - The National Center for Atmospheric Research in Boulder is taking to the skies in airplane to see whether it can collect enough information over the Colorado Rockies to provide additional warning time to people who may be in the way...
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RT @NSSL: Thunderstorm research project #MPEX begins tomorrow. Local reporters getting briefed by NCAR scientists! http://t.co/I7C9Z1HhCB
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Date: 5/14/2013 12:21:42 PM

Media Contact: JonDopplerWX (Jon Haverfield)

Media Outlet: Twitter

Attachment Link: http://twitter.com/JonDopplerWX/statuses/334342769948631041

RT @NSSL: Thunderstorm research project #MPEX begins tomorrow. Local reporters getting briefed by NCAR scientists! http://t.co/I7C9Z1HhCB
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...factor during the sentencing phase. The move by the defense to change Holmes' plea was a significant step as the case slowly creeps toward a trial or possible plea agreement. Weathermen take to skies for forecasts BOULDER (AP) - The National Center for Atmospheric Research in Boulder is taking to the skies in airplane to see whether it can collect enough information over the Colorado Rockies to provide additional warning time to people who may be in the way of potentially deadly storms....
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High-flying experiments could help weather forecasting

By Monte Whaley

The Denver Post

BOULDER, Colorado — The National Center for Atmospheric Research in Boulder is taking to the skies in an airplane to see whether forecasters can collect enough information over the Rockies to provide additional warning time to people who may be in the...
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Scientists based out of Rocky Mountain Metropolitan Airport will fly above the clouds for the next month, hoping to produce more accurate forecasts of when and where severe weather will hit homes and businesses. It's all part of the Mesoscale Predictability Experiment, or MPEX, which runs May 15 to June 15. A crew will fly a Gulfstream V out of the airport at 3 a.m. and climb to 40,000 feet for up to six hours to sample pre-storm atmosphere across Colorado and nearby...
Colorado weathermen take to skies for forecasts    BOULDER, Colo. (AP)   The National Center for Atmospheric Research in Boulder is taking to the skies in airplane to see whether it can collect enough information over the Colorado Rockies to provide additional warning time to people who may be in the way...
BROOMFIELD, Colo. — At the Rocky Mountain Skyport, the National Center for Atmospheric Research (NCAR) is showing off a Gulfstream V aircraft which will begin flying over and through thunderstorms building west of the Rocky Mountains for the next four weeks. This plane will...
Better forecasting of severe weather on high-altitude agenda of Boulder's NCAR  
Scientifically equipped aircraft to operate from Broomfield airport over next 30 days  
By John Aguilar, Camera Staff Writer
dailycamera.com  
Posted: 05/13/2013 01:29:31 PM MDT...
SOURCE: NCAR/UCAR Media Office  

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Scientists based out of Rocky Mountain Metropolitan Airport will fly above the clouds for the next month, hoping to produce more accurate forecasts of when and where severe weather will strike.

It's part of the Mesoscale Predictability Experiment, or MPEX, which runs May 15 to June 15. A crew will fly a Gulfstream V out of the airport at 3 a.m. to sample pre-storm atmosphere at 40,000 feet for up to six hours.

The crews will canvass the region that constitutes “tornado alley,” including parts of Colorado, Nebraska, Kansas, Oklahoma, Texas, Wyoming and New Mexico, said Morris Weisman, a lead investigator for the National Center for Atmospheric Research in Boulder.

They will look for severe-weather triggers lurking above the clouds. If they find trouble brewing, the information they gather will be relayed back to weather forecasters and agencies to issue more accurate warnings in a six- to 24-hour window.

Until now, forecasters have relied on a largely ground-based system that struggles to map storm behavior, especially more than six hours in advance, Weisman said.

Weather models need more detail on upper-level disturbances, such as pockets of strong wind or dry air miles above the ground. As those disturbances move into the Great Plains, they can trigger -- or suppress -- severe storms.

They are also hard to predict, which is where the jet and its technological payload pays off.

"We’re hoping to find out where you need to collect observations in order to get the most improvements in short-term forecasts," Weisman said. "Better prediction with a few hours of lead time could make a difference in helping people prepare."

The aircraft will use a microwave-based temperature sensor to profile horizontal temperature contrasts miles above the region. It will also deploy parachute-borne minisondes -- compact instrument packages -- to gather extra detail between flight level and ground level. The minisondes will provide information on temperature, moisture and winds four times each second.

NCAR is the lead agency on the project, funded with nearly $1 million from the National Science Foundation.

Copyright © 2013 The Denver Post
BOULDER, Colo._The National Center for Atmospheric Research in Boulder is taking to the skies in airplane to see whether it can collect enough information over the Colorado Rockies to provide additional warning time to people who may be in the way of potentially deadly storms.

Researchers are heading to the airport Wednesday to board an instrument-packed Gulfstream V for a six-hour mission to sample jet-stream winds, upper-level temperatures and other features across Colorado and nearby states.

According to the Boulder Daily Camera (http://tinyurl.com/c2ow9sk), senior scientist Morris Weisman says meteorologists currently rely on information collected at widely scattered sounding stations in Colorado, Nebraska, Kansas, Oklahoma, Texas, Wyoming and New Mexico to compile their weather forecasts.


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>>> Early warnings are of course critical to keeping us all safe during storms and now scientists in Boulder have a high flying new tool to help build their forecasting. Scientists from the national center for atmospheric research showed off a plane filled with computers to scan the atmosphere. This is part of a month long experiment. The plane will collect data in the early morning hours to help pinpoint when and where storms will develop later. >> But this really addresses the 6-24 hour forecast, getting information early enough to maybe make a difference in the preparations for storms and that hasn't been done. >> See how they do it. The experiment is funded by the national science foundation. >> We love all that weather information. >> Pretty cool. >>> Former Rockies reliever credits his success from interesting food choice. >>> Also ahead Tiger hasn't won a major but he is back on track to having perhaps the best year of his great career. >>> And up next to let us know how close we could get to breaking a , , , , , , , ,.
The return of the popular 9 news shred-a-thon is this weekend. This saturday including our studios at speer and logan. Bring up to three garbage bags or boxes of old documents with sensitive material. All we ask is for a donation to crimestoppers. We entered severe weather season when spring and summer storms blow up quickly and cause damage along the front range and the plains. A month long study that starts this week is designed to better predict those storms. The problem is, we don't know exactly where or when the thunderstorms are going to be. So this kind of program hopefully will improve our ability to forecast where and when. It is going to be. The study is funded by the national science foundation with some of the work being done by the national center for atmospheric research and csu. They will use data from weather balloons and planes that collect it and they are tracking storms and conditions that trigger them. Allow me to be the first to wish you a happy craft beer week. Born in our own backyard with the boulder base brewers association in 2006 it is a nationwide celebration of all things craft beer. Perhaps you noticed it seems like we have a new brewery opening every few weeks up and down the front range as well as other parts of our state. Events at breweries and bars clear across colorado throughout this week. Last year the brewers association estimated that craft brewing has a 446 million economic impact in colorado. Kyle speller is a pastor by day, voice of the denver nuggets by night. And he stopped by to show us how he has earned his latest title. Rescuers of geese. Speller and his family noticed a mother goose and her young ones waddles into traffic on hampton avenue. He played traffic cop to keep the cars off of the geese. Helped them on a gear by golf course. Even earned him street kred with his own family. The main thing is my daughter, you know, she loves animals and so I got to be a hero in my daughter's eyes. So, that was -- that was one of the, you know, the best part of that. [ laughter ] He says most of the drivers he flagged down understood what he was up to as soon as they saw the geese. James early jones is what comes to mind. Yes. When you hear the voice. Fantastic tonism the best chances for storms next week in kathy's forecast.
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BROOMFIELD, Colo. - At the Rocky Mountain Skyport, the National Center for Atmospheric Research (NCAR) is showing off a Gulfstream5...
> tonight ... A story you will see only on 7news. He's a doctor with a decade of problems ... Including medical board probation ... Lawsuits ... And patient deaths. > i had looked into this doctor and was appalled at how many complaints there have been against him, how many malpractice suits, the fact that he was on probation and we were unaware. > call7 investigator john ferrugia asks. Why is the state medical board allowing him to practice. That story tonight on 7news at ten. > a new way to predict thunderstorms in colorado. Scientists from the national center for atmospheric research unveiling a new project today. - new aircraft and weather balloons. With cutting-edge technology. Will fly in the morning to collect new data. Scientists will then put that data into a new numerical models. To better predict a severity. > these numerical models can also tell us the difference between ordinary thunderstorms that might produce heavy rain and hail and what we call supercell thunderstorms that can really have a chance to produce big tornadoes. > right now - meteorologists get data about the atmosphere in grand junction and denver. This new project will allow them to get information over the mountains as well. > new video of an ice tsunami. Look at this! In minnesota. Wind so strong. It's pushing ice off a lake onto people's lawns. This homeowner capturing the ice invasion on cell phone video. Right now - about ten miles off in ice. Some of it. About 30 feet tall. > Fair weather in colorado. Tomorrow, we may go for a record high temperatures in some areas. Scattered showers in some areas. Currently, downtown, at 83 degrees. There is a cold front to the north of us, moving in, tomorrow. Tonight, scattered showers in the mountains. By 3:00 a.m., showers diminishing, partly sc loudy skies. Tomorrow, starting out sunny, then theunny, then the clouds r. Scattered showers. The cold front will come into our night. Tomorrow night, then quickly moved out to the east. Highs tomorrow, 60's and 70's to the west. Nine days in some areas, east. Tomorrow, 88 will be a new record. This is your 7 day
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RT @bfld_enterprise: Better forecasting of severe weather on Boulder's NCAR agenda. Scientific aircraft to operate from #Broomfield -- htt…

Date: 5/13/2013 4:54:39 PM
Media Contact: MeganQuinn2 (MeganQuinn)
Media Outlet: Twitter
Attachment Link: http://twitter.com/MeganQuinn2/statuses/334049071222370304

RT @bfld_enterprise: Better forecasting of severe weather on Boulder's NCAR agenda. Scientific aircraft to operate from #Broomfield -- htt…
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Better forecasting of severe weather on high-altitude agenda of Boulder's NCAR: Starting Wednesday and lasting... http://t.co/TaUQQCtMD5
Better forecasting of severe weather on high-altitude agenda of Boulder's NCAR http://t.co/mgJq4w9drW

Date: 5/13/2013 4:31:30 PM

Media Contact: TheBoulderLife (Boulder Colorado)

Media Outlet: Twitter

Attachment Link: http://twitter.com/TheBoulderLife/statuses/334043243719299072

Better forecasting of severe weather on high-altitude agenda of Boulder's NCAR http://t.co/mgJq4w9drW
RT @dailycamera: Better forecasting of severe weather on high-altitude agenda of Boulder's NCAR http://t.co/rdErlK24IC via @abuvthefold #…

Date: 5/13/2013 4:30:52 PM
Media Contact: abuvthefold (John Aguilar)
Media Outlet: Twitter
Attachment Link: http://twitter.com/abuvthefold/statuses/334043086684565504

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94 of 160
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High-flying experiments could help weather forecasting

5/13/2013 4:21:42 PM

Monte Whaley

Denver Post - Online, The


...Predictability Experiment — or MPEX — it calls for the Gulfstream to take off at 3 a.m. on most morning from its base at Rocky Mountain Metropolitan Airport in Broomfield to sample pre-storm atmosphere across Colorado and nearby states. The aircraft — also known as HIAPER, the High-Performance Platform for Environmental Research — will cruise at 40,000 feet for up to six hours, which will enable researchers to thoroughly canvass a region where triggers for severe weather might be lurking. That area includes parts...
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Scientifically equipped aircraft to operate from Broomfield airport over next 30 days  This Gulfstream V, seen in a hanger at the Rocky Mountain Metropolitan Airport in Broomfield, will take to the air soon to collect more accurate severe storm data for Boulder's NCAR. (John Aguilar / Daily Camera)

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Major Field Campaign Targets Improvement in Thunderstorm Prediction

BOULDER, CO (PRWEB) May 13, 2013

To help better predict where and when thunderstorms are going to occur, the Department of Commerce’s National Oceanic and Atmospheric Administration (NOAA) has embarked on a major field campaign called MPEX. Featuring research aircraft and cutting-edge computer simulations, MPEX will point the way toward major improvements in 6- to 24-hour forecasts of severe weather. MPEX will include early morning flights with the NSF/NCAR Gulfstream V aircraft (also known as HIAPER, the High-performance Instrumented Airborne Platform for Environmental Research). (Photo © UCAR.) People want to know whether there will be thunderstorms, and when. BOULDER, CO (PRWEB) May 13, 2013 To help better predict where and when...
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The Gulfstream V ready to take off on a mission to study Tropical Storm Gaston. During the PREDICT field project NCAR researchers convened in St. Croix, U.S. Virgin Islands, to investigate tropical cyclogenesis (how tropical cyclones develop and strengthen), one of the most challenging aspects of atmospheric science. The scientists used the Gulfstream V research...
... BROOMFIELD – Sparing your vehicle a hail-shattered windshield, or, more importantly, saving your family from the anguish and trauma of a tornado-flattened home, could come down to a matter of minutes. Starting Wednesday and lasting for a month, the National Center for Atmospheric Research in Boulder will carry out a 40,000-foot-high experiment to see whether it can collect enough data over the Colorado Rockies to provide additional warning time, and a more precise...
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5/13/2013 2:09:30 PM

KLJB-TV - Online

http://www.kljb.com/story/22237056/major-field-campaign-targets-improvement-in-thunderstorm-prediction

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5/13/2013 2:07:26 PM

PRWeb - Online

http://www.prweb.com/releases/prweb2013/5/prweb10719189.htm

...featuring research aircraft and cutting-edge computer simulations, will point the way toward major improvements in 6- to 24-hour forecasts of severe weather. MPEX will include early morning flights with the NSF/NCAR Gulfstream V aircraft (also known as HIAPER, the High-performance Instrumented Airborne Platform for Environmental Research). (Photo © UCAR.) People want to know whether there will be thunderstorms, and when. To help better predict where and when spring thunderstorms will rip across...
...(MPEX), which runs from May 15 to June 15, is funded by the . It includes participants from the (NCAR); ; the University at Albany, ; Purdue University; the ; and NOAA's (NSSL). The project will include early morning flights with the aircraft (also known as HIAPER, the High-performance Instrumented Airborne Platform for Environmental Research) to sample the pre-storm atmosphere across Colorado and nearby states. In MPEX, the aircraft will cruise at 40,000 feet for up to six hours, which will enable researchers...
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NCAR is launching a major field campaign this week with collaborators to better predict where and when spring thunderstorms will hit the Rockies and Plains. The project, featuring research aircraft and cutting-edge computer...
RT @abuvthefold: This Gulfstream in #broomfield will take to the air soon to collect more accurate severe storm data #ncar #boulder http://…

Date: 5/13/2013 1:56:25 PM
Media Contact: MeganQuinn2 (MeganQuinn)
Media Outlet: Twitter
Attachment Link: http://twitter.com/MeganQuinn2/statuses/334004219034083328

RT @abuvthefold: This Gulfstream in #broomfield will take to the air soon to collect more accurate severe storm data #ncar #boulder http://…
Headline: This Gulfstream in #broomfield will take to the air soon to collect more accurate severe storm data #ncar #boulder http://t.co/LXeqWE82Va

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Media Contact: abuvthefold (John Aguilar)

Media Outlet: Twitter

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This Gulfstream in #broomfield will take to the air soon to collect more accurate severe storm data #ncar #boulder http://t.co/LXeqWE82Va
NCAR is launching a major field campaign this week with collaborators to better predict where and when spring thunderstorms will hit the Rockies and Plains. The project, featuring research aircraft and cutting-edge computer...
Major Field Campaign Targets Improvement in Thunderstorm Prediction

SOURCE: NCAR/UCAR Media Office

NCAR is launching a major field campaign this week with collaborators to better predict where and when spring thunderstorms will hit the Rockies and Plains. The project, featuring research aircraft and cutting-edge computer...
Newswise — BOULDER—To help better predict where and when spring thunderstorms will rip across Colorado's Front Range and the adjacent High Plains, researchers are launching...
I'm at Research Aviation Facility - NCAR (Broomfield, CO) w/ 2 others [pic]: http://t.co/o5fV1yBLzh

Date: 5/13/2013 12:37:32 PM

Media Contact: wcadkins (Bill Adkins)

Media Outlet: Twitter

Attachment Link: http://twitter.com/wcadkins/statuses/333984364440465408
Press conf about to start at #NCAR Aviation Facility. #NSF funded thunderstorm research project launching May 15 http://t.co/viCm8Q0qPZ

Date: 5/13/2013 12:33:58 PM

Media Contact: MaureenMcCann7 (Maureen McCann)

Media Outlet: Twitter

Attachment Link: http://twitter.com/MaureenMcCann7/statuses/333983465139740672

Press conf about to start at #NCAR Aviation Facility. #NSF funded thunderstorm research project launching May 15 http://t.co/viCm8Q0qPZ
Headline: I'm at Research Aviation Facility - NCAR (Broomfield, CO) http://t.co/sOSmmHDiiB

Date: 5/13/2013 12:31:42 PM

Media Contact: wcadkins (Bill Adkins)

Media Outlet: Twitter

Attachment Link: http://twitter.com/wcadkins/statuses/333982898187272192

I'm at Research Aviation Facility - NCAR (Broomfield, CO) http://t.co/sOSmmHDiiB
I'm at Research Aviation Facility - NCAR (Broomfield, CO) http://t.co/OhirLEBTrx

Date: 5/13/2013 12:24:53 PM

Media Contact: MaureenMcCann7 (Maureen McCann)

Media Outlet: Twitter

Attachment Link: http://twitter.com/MaureenMcCann7/statuses/333981180884041728

I'm at Research Aviation Facility - NCAR (Broomfield, CO) http://t.co/OhirLEBTrx
Major field campaign targets improvement in thunderstorm prediction: Multiagency study combines research fligh... http://t.co/VGgOBR7rve
MPEX will include early-morning flights with the NSF/NCAR Gulfstream V aircraft. Credit: UCAR General

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…days BROOMFIELD Sparing your vehicle a hail-shattered windshield, or, more importantly, saving your family from the anguish and trauma of a tornado-flattened home, could come down to a matter of minutes. Starting Wednesday and lasting for a month, the National Center for Atmospheric Research in Boulder will carry out a 40,000-foot-high experiment to see whether it can collect enough data over the Colorado Rockies to provide additional warning time, and a more precise…
KUSA - Researchers at the National Center For Atmospheric Research (NCAR) are announcing a new project to help forecasters do a better job predicting severe thunderstorms. They'll be using a specially outfitted Gulfstream V research jet based...
High-flying experiments could help weather forecasting

5/13/2013 10:13:49 AM

Monte Whaley, The Denver Post

Denver Post - Online (press release), The

http://news.vocus.com/ct?haid=bc7ff2127139d30b136847670850365d4bbab8a8424a&co=f000000012320s-1112359307

...Predictability Experiment or MPEX it calls for the Gulfstream to take off at 3 a.m. on most morning from its base at Rocky Mountain Metropolitan Airport in Broomfield to sample pre-storm atmosphere across Colorado and nearby states. The aircraft also known as HIAPER, the High-Performance Platform for Environmental Research will cruise at 40,000 feet for up to six hours, which will enable researchers to thoroughly canvass a region where triggers for severe weather might be lurking. That area includes parts...
Starting Wednesday and lasting for a month, the National Center for Atmospheric Research in Boulder will carry out a 40,000-foot-high experiment to see whether it can collect enough data over the Colorado Rockies to provide additional warning time, and a more precise...
>>>today we are expecting to get a better picture of wildfire danger with all the rain you would think it is helping. U.S. ag secretary and interior secretary will release projections for the west. Experts say we can still ex% above normal fire potential for arizona, new mexico, california and oregon. Colorado, utah, montana, idaho and washington are looking at a greater risk of five. Nevada expected to be normal. That's because the lingering drought conditions and moisture stunted the growth of fuels there. Moisture has stunted growth for fuels. Following up for you on >>>following up on the waldo canyon fire near colorado springs there is good news. After all that rain last week the area did manage to avoid flash flooding in the burn scar. Meteorologist report eight inches of snow fell on the burn scar. 1.2-inches of rain. To start drilling a new geothermal “test well”. The drilling project near herron park ... Is part of a city initiative launched in 2008 , to ene >>> Aspen city leaders said contractors will drill a test well. It was part of a city initiative launched in 2008. To tap geo thermal imaging to cool and heat buildings. Park on the street in downtown . Machines are going up along manitou, canon , and ruxton avenues. It's a dollar for three hours and two dollars for an additional two hours. We're getting into severe thunderstorm season...and later today, the people at the national center for atmospheric research...ncar...are going to announce a new project to help forecasters do a better job of predicting thund >>> Later today people at ncar in boulder will announce a new project to help forecasters do a better job of predicting thunderstorms in colorado. They'll use a specifically outfitted five research jet based at rocky mountain metropolitan airport. It will take high altitude measurements during thunderstorms including sensors dropped in the heart of the cells. Readings will be combined with weather balloon data and simulations of upper atmospheric disturbances on their computer models. They hope this will improve the weather forecast lead times during what is typically a crucial six to 24-hour window for predicting thunderstorms. Scientist will detail the project at 10:30 this morning.
MPEX, Mesoscale Predictability Experiment, NCAR, National Center For Atmospheric Research, Hiaper, High-Performance Instrumented Airborne Platform for Environmental Research, Thunderstorms, Computer Simulation, Weather Forecast, NSF, National Science Foundation, Severe Weather, weather balloons, radiosondes, dropsondes, Weather Prediction,...
of the huge ice sheets being pushed ashore by 40 mile per hour winds in northern minnesota. You can see just how fast it's moving too. W-c-c-o-t-v - reported ice from lake mille lacs mill lax reaching the doorsteps and windows at the... Izatys eye-zeht'-ees resort ..the wind speed lightened up eventually - but was strong enough to cover 10 miles of the shoreline in ice. Some ice piled as high as 30 feet. The ice didn't stop there.it went as far as to put a beach in canada into a state of emergency.the wind forced sheets of ice on the canadian province of manitoba - ice crystals covered trees and houses. The damage to some of these homes is pretty extensive. We're getting into severe thunderstorm season..and later today, the people at the national center for atmospheric research...ncar...are going to announce a new project to help forecasters do a better job of predicting thunderstorms.. They'll be using a specially outfitted gulfstream five research jet that will take high-altitude measurements of thunderstorm cells..including sensors that will be dropped into the heart of storms.. Those readings will be combined with weather balloon data..and simulations of upper atmospheric disturbances.. Ncar hopes all of this will improve the weather forecast lead times during what's typically a crucial six to 24 hour window for thunderstorms... Scientists will detail the project at a news briefing set for 10:30 this morning.. The price of sending mail may be going up -- again as the postal service looks for ways to stop its losses. The postal service board is looking into hiking prices on first-class mail as well as bulk mail. Raising prices may be a last resort as agency managers look at renegotiating labor agreements and other ways to reduce costs. They've got to do something -- the postal service lost nearly 2-billion dollars in its latest quarter people aren't mailing as many letters as they used to -- package delivery, however, is up. Don't be surprised if you don't see as many millennials dining the next time you eat out. A new study finds that over the last five years, restaurant visits by boomers and older americans have grown steadily, while those by people under 30 have declined. The reason, boomers are retiring later in life, giving them more disposable income and younger people were hit finically harder in the recent economic downturn and typically make less money. This is going to be a good week for shorts, shades, and lots of sunscreen. Spring like weather is finally here in a big way.
the national center for atmospheric research are announcing a new way to improve forecasts of thunderstorms in our state. We'll tell you about it coming up. That's all for 9news at 4:30... 9news at 5 a.m...is just minutes away.
ARLINGTON, Va., May 13 -- The National Science Foundation issued the following press release:

To better predict where and when spring thunderstorms rip across Colorado's Front Range and the adjacent Great Plains, researchers are launching a major field project this week with high-flying aircraft and fine-grained computer simulations.

The month-long study could point the way to major improvements in lead times for weather forecasts during what has been called a crucial six- to 24-hour window.

"People want to know whether there will be thunderstorms and when," says National Center for Atmospheric Research (NCAR) scientist Morris Weisman, one of four principal investigators on the project.

"We're hoping to find out where you need to collect observations in order to get the most improvement in short-term forecasts. Better prediction with a few hours of lead time could make a big difference in helping people prepare."

MPEX (pronounced "em-pex"), the Mesoscale Predictability Experiment, runs from May 15 to June 15 and is funded by the National Science Foundation (NSF).

The project includes participants from NCAR; Colorado State University; the University at Albany, State University of New York; Purdue University; the University of Wisconsin-Milwaukee; and the National Oceanic and Atmospheric Administration's National Severe Storms Laboratory.

"MPEX will lead to a better understanding of the initiation and development of severe storms in an area of the country that's particularly affected by them," says Chungu Lu, program director in NSF's Division of Atmospheric and Geospace Sciences.

"If we can move 'early warnings' even sooner through the results of MPEX, it will lead to safer skies for air travelers and safer situations on the ground as well."

The project will include early morning flights with the NSF/NCAR Gulfstream V aircraft to sample the pre-storm atmosphere across Colorado and nearby states.

The Gulfstream V can cruise at 40,000 feet for up to six hours, which will enable researchers to thoroughly canvass the entire region where triggers for severe weather might be lurking.

MPEX will also include afternoon launches of weather balloons carrying instrument packages called radiosondes, which will profile conditions around thunderstorms as they develop and move east across the Great Plains.
Filling the same-day gap

Severe weather warnings from the National Weather Service give people up to an hour's notice for tornadoes and other threats on a county-by-county basis. A key goal of MPEX is to help improve the forecasts that fall between two types of longer-range alerts:

* convective outlooks, which highlight the risk of severe weather up to eight days in advance across large parts of the country;

* tornado and severe thunderstorm watches, which are issued up to eight hours in advance for state-sized areas.

Same-day forecasts often note the likelihood of severe storms, but they do not usually specify where and when the storms will develop.

MPEX will help determine whether more detailed observations and simulations could lead to more specific forecasts of storm location and behavior as much as a day in advance.

Advanced forecast models can now simulate the weather using data at points packed as closely as about a half-mile from each other. This allows showers and thunderstorms (known as "convection") to be explicitly depicted. But the newer models still struggle to reliably map out storm behavior beyond about six hours in advance.

Scientists believe this may be largely because the models need more detail on upper-level features, such as pockets of strong wind or dry air, located several miles above ground level.

As these features move into the Great Plains, they can be critical for triggering or suppressing severe storms. However, weather satellites may not see these features, and they often go undetected by limited surface and upper-air networks across the Rocky Mountain states.

"The structure of the atmosphere two to six miles above sea level is incredibly important," Weisman says. "This appears to be where the biggest forecast errors develop, so we need to collect more data at these heights."

In the sky and on the ground

To get around the data roadblock, MPEX will send the Gulfstream V from its base at the Rocky Mountain Metropolitan Airport in Broomfield on missions that will start as early as 3 a.m.

The Gulfstream V will sample jet-stream winds, upper-level temperatures, and other features across Colorado and nearby states.

The aircraft will use a microwave-based temperature sensor to profile horizontal temperature contrasts miles above the region.

At pre-specified locations, the Gulfstream V will also use parachute-borne minisondes—compact instrument packages, similar to the 200-plus radiosondes used every day across the nation—to gather
extra detail between flight level and ground level.

The minisondes will provide information on temperature, moisture, and winds four times each second.

"The Gulfstream V is perfect for this kind of study," says NCAR project manager Pavel Romashkin, who will oversee MPEX aircraft operations."The G-V is one of very few aircraft in weather research that can sample the atmosphere near the top of important features for a number of hours."

MPEX will also gather data with three radiosonde launch units operated by Purdue and NSSL in vehicles that will maneuver around late-day thunderstorms.

The goal is to find out how well the extra data can help predict local and regional weather conditions into the next day, as well as to assess how the thunderstorms interact with the atmosphere that surrounds and supports them.

"We know that even isolated, short-lived thunderstorms influence their environment," says Robert "Jeff" Trapp of Purdue, an MPEX principal investigator.

"The MPEX data will allow us to quantify these influences and examine how well they are represented in computer forecast models. This information can then be used to help improve weather forecasts."

Testing the value of enhanced observations

With the help of improvements in computing power and scientific understanding, forecast models can depict weather in far more detail than just a few years ago.

On each day of operations (about 15 in all during the project), MPEX will produce an ensemble of up to 30 forecasts using the NCAR-based research version of the multiagency Weather Research and Forecasting model (WRF-ARW).

Along with data from the Gulfstream V flights, each WRF-ARW ensemble member will use a slightly different characterization of early-morning weather conditions in order to allow for the uncertainty inherent in those measurements.

Forecasters can then issue forecasts with greater or lesser confidence based on how the ensemble forecasts agree or disagree.

The MPEX team will also evaluate how much the Gulfstream V data improve forecasts in two other modeling systems, both of which are updated each hour.

The complex process of incorporating observed data into the MPEX simulations will be handled by NCAR's Data Assimilation Research Testbed.

Studies have shown that major forecast improvements are possible when the right kinds of data are collected and assimilated into forecast models.

Scientists hope the results from MPEX will help advance this process, which could improve predictions of severe thunderstorms as well as other types of high-impact weather where better forecasts in the six- to
24-hour period could help people and communities better prepare. For any query with respect to this article or any other content requirement, please contact Editor at htsyndication@hindustantimes.com

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