

The American Meteorological Society

# Certified Consulting Meteorologists

## Newsletter

Volume 8, Issue 4

Winter 2017–2018

This newsletter is intended to enhance communications between CCMs, the BCCM, and the AMS. It is published quarterly to provide information about the on-going activities of the CCM program. Please remember to use the [CCM LinkedIn page](#) for your communication and exchanges between CCMs.

**Alicia Wasula**

CCM Newsletter Editor

**Kelly Savoie and Sangjun Lee**

CCM Newsletter Managing Editors

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## The Chair's Column

Dear CCM Colleagues:

I hope you all had a wonderful holiday season and best wishes for a prosperous New Year. I am looking forward to seeing as many of you as possible in Austin, TX at the 98th Annual Meeting of the AMS during 7 – 11 January 2018. As we come to the end of the 2017 year, three members of the Board of Certified Consulting Meteorologists (BCCM) will be ending their service to the board, and they are Mitchell Baer (CCM #474), Ronald Baskett (CCM #346), and myself (CCM #660). The BCCM voted on three candidates submitted to us for a four-year term and these individuals will succeed the departing board members. They are Randall Bass (CCM #703), Mark McGinnis (CCM #722), and David Moran (CCM #730). Congratulations to our newest board members and best wishes for a successful and productive four years. Our chair elect for 2018 is Tim Hall (CCM #641) and his duties will begin at the conclusion of the AMS meeting. The BCCM also chose Alicia Wasula (CCM #711) as chair elect for 2018, and she will serve as BCCM chair for 2019. My best wishes to Tim and Alicia for a successful year. If you are interested in serving on the BCCM or know of anyone who might make a good candidate, please reach out to the board leadership.



This year has been busy for the board. We had eight new applicants for certification, and nine candidates will take their oral exam in Austin (there were three applicants from the previous year). One candidate took a regional exam and one will finish the written process in early 2018. The board also selected a Harrison Award winner, which will be announced at the AMS banquet. If you are aware of a fellow CCM who is deserving of this award please nominate them for next year. Additionally, we successfully organized the short course "The Art and Science of Forensic Meteorology" which will be held on 7 January in association with the annual meeting.

Also during 2017, an overhaul of the written exam process began, and a process was established under the leadership of Mitchell Baer, Tim Hall, and myself. Mitch agreed to oversee the process and seven subject area groups were formed. The task is to review the current bank of questions in order to incorporate the latest in our science as well as to generate new content in areas such as climate dynamics and applied climatology. We envisioned that this process would continue through 2018. Many of the working groups have moved forward, but volunteers are still welcome.

I invite all CCMs attending the meeting to visit the Certification Breakfast to be held on Wednesday 10 January 2018 from 7:00-8:15 am in Ballroom A in the Convention Center. This year AMS CBMs and Sealholders will also be in attendance. Speakers will include incoming and outgoing Board Chairs of the Board of Certified Consulting Meteorologists and the Board of Broadcast Meteorologists. The breakfast will begin at 7:00 with a welcome and introductions, and as we have traditionally done for many years, the NCM will meet from 8:15 – 9:30 am following our meeting. The breakfast is a chance for you to meet your board leadership as well as make contact with other certification holders.

Finally, it has been my honor and pleasure to serve as board chair for 2017. I had the privilege of working with highly motivated and productive professionals from all sectors of atmospheric science. Thank you to all of you on the board for your hard work this year. Thank you to Mitch and Ron for your four years of excellent service. Mitch will continue to direct the exam overhaul process in 2018. Thank you also to Kelly Savoie for her hard work, dedication, and support of the BCCM functions.

Anthony R. Lupo, CCM #660 Chair  
Board of Certified Consulting Meteorologists  
American Meteorological Society ■

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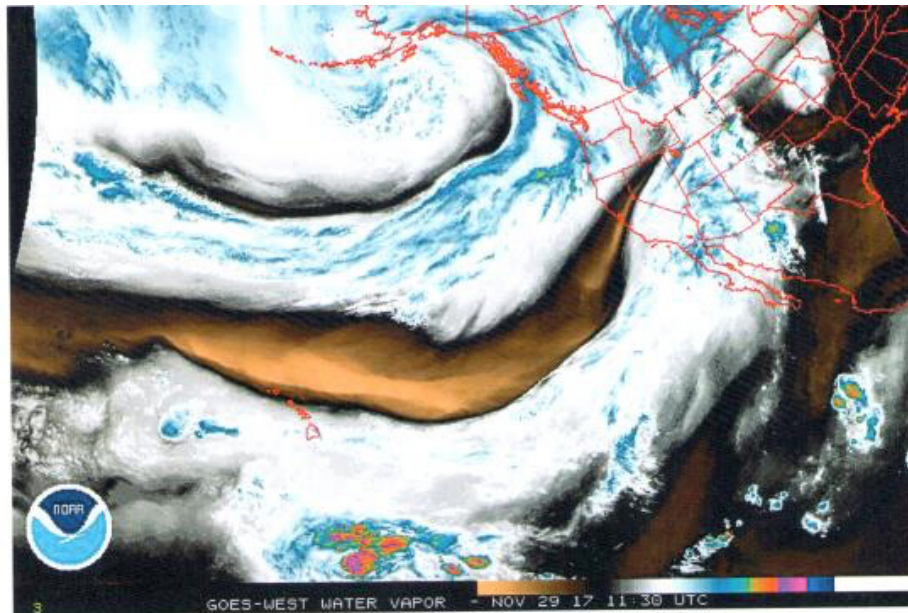
## Forecast Dilemma – How much stock can we put in numerical prediction model forecasts beyond 4–7 days?

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December 1, 2017

Operational weather forecasters, including CCMs, rely heavily on NCEP numerical prediction models to provide forecast guidance beyond 4 days, but the GFS global model appears to have continuing biases towards low pressure beyond the one-week time frame that lead to erroneous predictions along the U.S. West Coast, particularly in winter. This year, as in other years, there is a model tendency to create low pressure systems and strong flow across portions of Southern California that don't materialize. In addition, and possibly related, there still does not appear to be adequate initialization of low latitude zonal flow, including the strength, location and intensity of the sub-tropical jet stream that often provides the moisture and energy for much of the U.S.'s weather in winter. The poor initialization and incorporation of low latitude features into models has been a problem dating back at least to the 1970s. Improved assimilation of satellite data into the forecast process, particularly for low latitude flow seems to be an area that is crucial to placing faith in longer-term weather predictions. Figure 1 shows a revealing example of twin jet streams and their

associated atmospheric rivers of moisture evident on water vapor satellite imagery that have a major impact on the flow patterns and weather across the U.S. ■



## WeatherExtreme Ltd. CCM's Support the Airbus Perlan 2 Glider World Record

By: Elizabeth Austin, Ph.D., CCM

WeatherExtreme Ltd. Meteorologists & CCM's celebrated the new world altitude record of the Airbus Perlan 2 glider. On September 3, 2017, Chief Pilot, Jim Payne, and Co-Pilot, Morgan Sandercock, reached a GPS altitude of 52,172 feet flying out of El Calafate, Argentina, in the lee of the Andes. This new world record broke the old Perlan 1 glider altitude record of 50,272 feet flown in the Perlan 1 unpressurized glider flown by Perlan Founder Einar Enevoldson and Pilot Steve Fossett. Ultimately phase 2 of the Perlan Project will attempt to reach 90,000 feet, a world altitude record for any wing-supported flight, with or without an engine. Phase 3 of the project is to reach 100,000 feet in a manned glider.

The Airbus Perlan Mission II is an initiative to fly a manned, engineless glider to the edge of space using the weather phenomena of stratospheric mountain waves. The unique atmospheric conditions required to achieve these high altitude flights involve a rare combination of the jet stream, the polar vortex positioning such that the polar night jet edge is overhead, prefrontal conditions, a stable lower atmosphere and strong winds at mountaintop levels and increasing winds (energy) with altitude. This unique combination of events occurs in only a few places on the planet and only certain times of the year. In order to reach 90,000 feet this necessary combination of events occurs only a handful of times a year if we are lucky given all of the parameters required including the fact that there are only about 8 hours of daylight flying time during the winter in this portion of Argentina (50.3° South latitude).

Dr. Elizabeth Austin, CCM, Dr. James Means, Dr. Ashok Pohkarel and Mr. James Purpura, CCM, provided atmospheric modeling, forecasting and scientific support for the mission. The experimental, carbon fiber glider carries scientific instruments including Cube Sat experiments and is a "flying research vehicle with the capability to use the polar vortex and its associated polar night jet to ride stratospheric mountain waves up to 90,000 feet (for phase 2)", says Dr. Austin, Chief Scientist of the Perlan Project". This project provides a unique platform for scientific discovery ranging from atmospheric turbulence to climate change to radiation



effects on pilots of aircraft at high altitude, just to name a few.

“With every Airbus Perlan Mission II milestone, we continue to learn about how we can fly higher, faster and cleaner. But we also learn that aviation still has the power to surprise, thrill us, and motivate us to find new frontiers of endeavor”, said Tom Enders, Airbus CEO.

The Perlan 2 glider is based out of Minden, Nevada, just east of Lake Tahoe, and will be flying in the lee of the Sierra Nevada range this winter/spring of 2018. Then from late July through mid-September of 2018 the glider will be back in South America for more world altitude record attempts and scientific flights out of El Calafate, Argentina. As with most test flights of experimental manned aircraft, the Perlan 2 project is expanding its altitude envelope in increments of approximately 10,000 feet each flight with the hope of reaching ~70,000 feet MSL this 2018 Argentina season.

When it is flying, the Perlan glider can be followed in real time using its virtual cockpit:

<http://perlanproject.cloud/VirtualCockpit.html>

The Perlan Project is a non-profit, 501(c)(3). More information about the Perlan Project can be found at the following sites:

<http://www.weatherextreme.com> or <http://www.perlanproject.org> ■



Photo of Jim Payne, Chief Pilot, front seat and Morgan Sandercock, Co-Pilot, rear seat, after setting a new world glider altitude record of 52,172 feet MSL GPS altitude on September 3, 2017. (Photo Credit: Jackie Payne)



Photo of Jim Payne, Chief Pilot, left, Morgan Sandercock, Co-Pilot, right, and Tow Plane Pilot Horacio Humberto Miranda (aka Cholo). (Photo Credit: Jackie Payne)



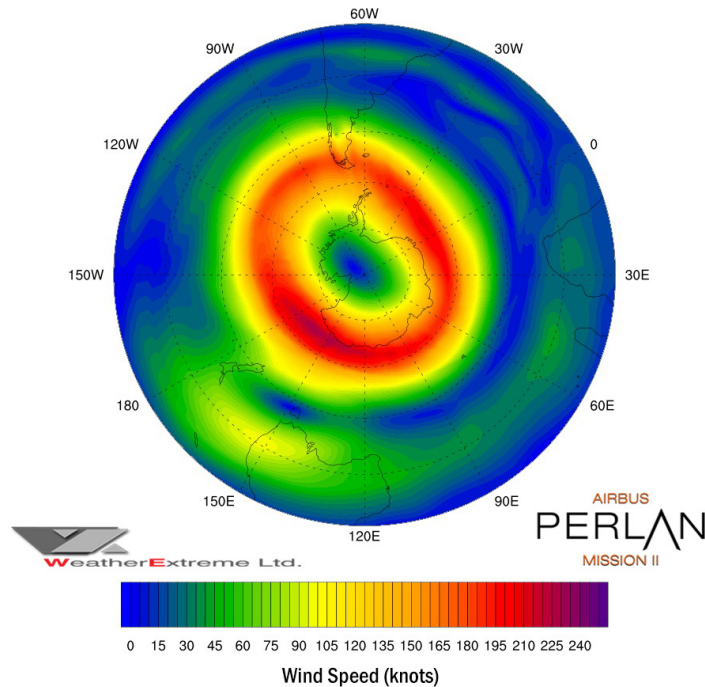
Photograph from the tail cam of the Perlan glider at Flight Level 520 on September 3, 2017 over the Andes in South America. (Photo Credit: The Perlan Project).

## PERLAN WORLD RECORD FLIGHT

1730 UTC September 3, 2017

Polar Vortex

Wind Speed at ~ 100,000 feet



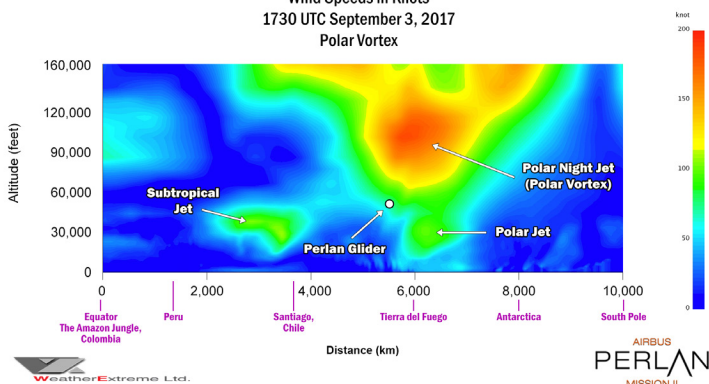
Graphic of 10 hPa level wind speeds over the southern hemisphere on September 3, 2017.

## PERLAN WORLD RECORD FLIGHT

Wind Speeds in Knots

1730 UTC September 3, 2017

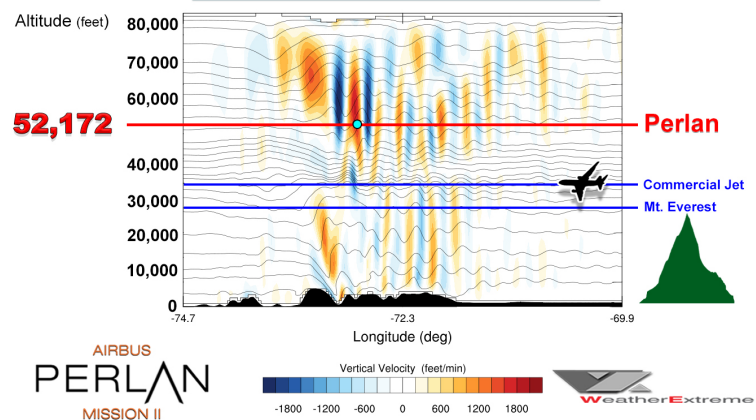
Polar Vortex



Graphics of a cross section of the winds speeds from the equator to the south pole on September 3, 2017.

## WORLD RECORD FLIGHT

1730 UTC September 3, 2017



Weather Research & Forecasting (WRF) model run output of the forecast data on September 3, 2017, showing vertical velocities and potential temperature with altitude.

# AMS Online Weather and Climate Service Providers Directory

We would like to remind you about the online Weather and Climate Service Providers Directory. As a benefit to our CCMs, you are eligible for a complimentary listing. CCMs will show up first in search results followed by AMS members and then non-members.

Some of the great features of the directory include the ability for you to add:

- company logo
- profile photo
- social media links
- Website URL
- CV
- photo albums
- videos
- text articles
- up to ten specialties

To enter your free listing, go to the following [sign up page](#) created exclusively for CCMs, and follow the prompts; have your AMS Member Account Number and CCM Number available. The directory is linked from the AMS home page under [Finding an Expert](#) in the 'Information For' section of the site. To date, 105 CCMs have taken advantage of a free listing in the directory. If you currently have a listing, you may want to review it on an annual basis to make sure content stays up to date. ■

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## COMET Quarterly Announcement, Winter 2017-18

Greetings!

As the new COMET Director, I hope that you continue to find our materials helpful in your professional development and training activities. This last fiscal year we published 44 lessons, an extraordinary number, plus many lessons in Spanish, and several other languages.

Please look below for highlights of COMET's newest publications on MetEd. As you can see, we have been quite busy lately: 16 new publications in English, plus 4 in Spanish.

I welcome your feedback on our courses. Please use the survey in each lesson to share your impressions and comments. Reviews help other users decide whether a lesson might be useful.

We look forward to sharing our future work with you through these announcements.

Dr. Liz Page, COMET Director

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### GOES-R/16

- [GOES-16 Case Exercise: 8 May 2017 Colorado Hail Event](#)
- [GOES-R Series Faculty Virtual Course: Multispectral RGB Composites](#)
- [GOES-R Series Faculty Virtual Course: Geostationary Lightning Mapper](#)
- [GOES-R Series Faculty Virtual Course: RapidScan Imaging](#)
- [GOES-R Series Faculty Virtual Course: Aviation Products](#)

- [GOES-R Series Faculty Virtual Course: Severe Storms](#)
- [GOES-R Series Faculty Virtual Course: Tropical Cyclones](#)
- [GOES-R Series Faculty Virtual Course: Advanced Baseline Imager](#)

### Instrumentation

- [Meteorological Instrument Performance Characteristics](#)



- [Instrumentation and Measurement of Atmospheric Temperature](#)

### Hydrology

- [What's Coming in Hydrologic Impacts Studies?](#)
- [Dam Failure Concepts and Modeling](#)

### Misc

- [Local Tropical Cyclone Precipitation Forecasting and Communication](#)
- [Communicating Winter Weather Surface Impacts](#)
- [Web-Based Ensemble Tools: Ensemble Situational Awareness Table](#)

- [Gravity for Geodesy II: Applications](#)

### Spanish Lessons

- [Fundamentos de PNT: la predicción numérica y el pronóstico](#)
- [Guía de referencia para los productos de los sistemas de predicción por conjuntos \(EPS\)](#)
- [Meteorología básica: introducción a la atmósfera](#)
- [Teoría básica de sistemas de predicción por conjuntos \(EPS\)](#)

Need some materials translated? Or maybe you just want to know a bit about what is involved in the translation process? Visit COMET's [Translation Resource Center](#):

Currently, these materials are freely available to everyone, courtesy of our primary sponsors. They are NOAA's NWS, NESDIS and NOS programs, EUMETSAT, the Naval Meteorology and Oceanography Command, the Meteorological Service of Canada, Bureau of Meteorology, and the USACE and DOI/Reclamation. ■

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## Upcoming AMS Conferences

### [98th AMS Annual Meeting](#)

7–11 JANUARY 2018 AUSTIN, TX

### [AMOS-ICSHMO 2018](#)

5–9 FEBRUARY 2018 UNSW KENSINGTON CAMPUS, SYDNEY, AUSTRALIA

### [33rd Conference on Hurricanes and Tropical Meteorology](#)

16–20 APRIL 2018 PONTE VEDRA, FL

### [2018 AMS Washington Forum](#)

24–26 APRIL 2018 WASHINGTON, DC

### [33rd Conference on Agricultural and Forest Meteorology/12th Fire and Forest Meteorology Symposium/Fourth Conference on Biogeosciences](#)

14–18 MAY 2018, BOISE, ID

### [29th Conference on Weather Analysis Forecasting \(WAF\)/25th Conference on Numerical Weather Prediction \(NWP\)](#)

4–8 JUNE 2018, DENVER, CO

### [23rd Symposium on Boundary Layers and Turbulence/21st Conference on Air-Sea Interaction](#)

11–15 JUNE 2018 OKLAHOMA CITY, OK

### [18th Conference on Mountain Meteorology](#)

25–29 JUNE 2018, SANTA FE, NEW MEXICO

### [15th Conference on Cloud Physics/15th Conference on Atmospheric Radiation](#)

9–13 JULY 2018, VANCOUVER, BC

### [10th International Conference on Urban Climate/14th Symposium on the Urban Environment](#)

6–10 AUGUST 2018, NEW YORK, NY

### [29th Conference on Severe Local Storms](#)

22–26 OCTOBER 2018, STOWE, VT

Upcoming [meetings of interest](#) being offered by other organizations may also be found on the AMS website. ■

## Connect on Social Media

### [LinkedIn](#)

The LinkedIn page is becoming more active. If you have not joined, please do! The LinkedIn page is accessible and open only to CCMs. You must join LinkedIn (it is free) first before requesting to join the CCM page. Once you join LinkedIn (or if you are already a member), then just simply type “Certified Consulting Meteorologist” in the search box on the top right to search for our group. We anticipate the LinkedIn site to be an easy way for CCMs to communicate with each other and keep us all abreast of news, developments, and items of interest to CCMs.



### [Facebook](#)

For all CCMs, colleagues, and the general public, we have a CCM Facebook page. It can be found by searching in Facebook for “Certified Consulting Meteorologist (CCM).” This page needs much more interest to be generated, beginning with every CCM “liking” the page.



### **Twitter**

For all CCMs, colleagues and the general public, we have a new Twitter account. Leading up to the Annual Meeting, this year we intend to market the CCM booths at the Student & Career Fairs and AMS Resource Center via Twitter. If you are on Twitter, please follow the handle [@AMS\\_BCCM](#) ■



Thanks to all of our contributors  
for this issue.

We encourage you to share your experiences, views,  
findings, or studies for the next newsletter.

E-mail your articles to:  
[Alicia Wasula](#)

The Spring 2018 Newsletter submission deadline is March 15.