

New instrument for atmospheric research

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An advanced laser-based instrument to help research into climate change is being developed for one of the world's leading atmospheric research aircraft.

Professor Paul Kaye, Dr Edwin Hirst and Dr Richard Greenaway at the University of Hertfordshire's Science and Technology Research Institute (STRI) have been commissioned by the US University Corporation for Atmospheric Research (UCAR) to build the instrument for their new HIAPER (High-performance Instrumented Airborne Platform for Environmental Research) aircraft, based in Colorado.

The instrument, which is being tailored to UCAR's requirements, will be used to study microscopic water droplets and ice crystals in clouds, providing information to meteorologists to help them to make climate prediction models more accurate.

Professor Kaye said: "We had already developed instruments for the Met Office and other researchers in the UK to help them understand some of the processes that take place in clouds and how these ultimately affect our climate and potential global warming. UCAR scientists became aware of this work and asked us to design and build a new instrument for their use. It's a significant step for us because the HIAPER aircraft is a very exciting development to be contributing to."

Dr Hirst, the principal designer of the instrument, said: "We have just had the Critical Design Review in Colorado and are aiming to deliver the final instrument to UCAR at the end of the year. One of the toughest

challenges has been to meet all of the conditions to meet the air-worthiness requirements laid down by the US authorities.”

The UH researchers are all part of the Particle Instruments Research Group in the STRI, and the HIAPER project is just one of several currently underway. “We have had other enquiries from the USA, Canada, and Europe for similar types of instrument”, said Dr Greenaway, who developed the instrument’s software. “All in all, the next 12 months is going to be very busy for us!”

The US National Science Foundation owns HIAPER, which is maintained and operated by the National Center for Atmospheric Research (NCAR). UCAR manages NCAR under primary sponsorship by the National Science Foundation (NSF).

Source: University of Hertfordshire

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