Clouds and rainbow from a recent road trip to New Mexico (Photo by Carlye Calvin.)

Staff Notes monthly

For the people of NCAR, UCAR, and UOP Vol. 43 #7 • July-August 2008

An interview with Eric Barron, NCAR's new director

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Eric comes to NCAR from the University of Texas, where he was dean of the Jackson School of Geosciences and held the Jackson Chair in Earth System Science. He replaces Tim Killeen, who has accepted a position as director for geosciences at NSF.

A geologist by training, Eric came here on a Cray Supercomputing Fellowship in 1976 while pursuing a graduate degree in oceanography at the University of Miami. He became a postdoctoral fellow and early-career scientist, leaving NCAR in 1985 to return to UM as an associate professor. He was then dean of Pennsylvania State University's College of Earth and Mineral Sciences before his move to Texas.

More>

Eric Barron.

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NCAR and Boulder Journey School are collaborating to host "The Wonder of Learning—The Hundred Languages of Children," an exhibit that showcases how children engage naturally in the learning process. More >

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You've seen them around campus: friendly young faces boarding the shuttles, lunching together in the cafeteria, and borrowing blue bikes. More >

Connecting science and the media
According to recent polls, 90% of scientists think that few members of the press understand the nature of science and technology. More >

Short Takes
An overview of projects throughout the organization. More >

Just One Look

SOARS protégé Ian Colon shot this photo of a butterfly during a photography workshop at Sawhill Ponds presented by UCAR photographer Carlye Calvin.

More photos taken by SOARS protégés

July-August 2008

An interview with Eric Barron, NCAR's new director

Eric Barron has come full circle. He started his career at NCAR in the 1970s when he applied for a summer fellowship—and surprised himself by getting it. He later left NCAR to join the university community. Now, he's once again gazing at the Flatirons from his office window, this time as NCAR's new director.

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Earlier this year, Eric served as chair of the UCAR Board of Trustees, a position he resigned upon accepting the NCAR directorship.

Staff Notes sat down with Eric, who's settling into his office on the fifth floor of the Mesa Lab, to talk about the road to NCAR and his plans as director.

NCAR Directors

Walter Orr Roberts • 1960–68
John Firor • 1968–74
Francis Bretherton • 1974–80
Wilmot Hess • 1980–86
Richard Anthes • 1986–88
Robert MacQueen (acting) • 1988
Robert Serafin • 1989–2000
Timothy Killeen • 2000–08
Eric Barron • 2008–present

Walt Roberts served as both UCAR's first president and NCAR's first director from 1961 to 1967. Francis Bretherton also took both roles during his tenure, with John Firor serving as NCAR executive director and handling much of the center's day-to-day administration from 1974 to 1979.

Staff Notes: What attracts you to the NCAR director position?

Eric: Above all else, two things: There is an extraordinary amount of quality at NCAR, and what's going on here is of absolutely critical importance to society. I can't think of two things that would make a job better: good people, and knowing that what you're doing is really important.

Staff Notes: What qualities do you bring to the role?

Eric: A variety of things. It doesn't hurt to have a little history—to understand what it means to be a graduate student at NCAR, postdoc, ladder scientist, external participant, and trustee. I have a fair amount of managerial experience as dean at two different large universities in rather different programs. Certainly it helps to have some sense of budgets and promotion, and all those things that make any kind of institution run. And

I'm a very committed person. That makes a difference.

Staff Notes: How would you characterize your leadership style?

Eric: I really like to talk to people, get advice, and have interactions. I promote this even though in many cases I might hear things that I can't do or can't agree with. I think that no one is so wise that they can just merrily go off and believe that they know all the answers. But at the same time, I know I have to make decisions and I'm not afraid to make them.

A second element of my leadership style is that I like to think strategically. An awful lot of institutions around the world have strategic plans that aren't strategic. I think a strategic plan should be actionable, so that what you're looking at takes you somewhere. It makes a big difference to people when they sense what the future is and know what their leadership is working toward.

Staff Notes: How do you plan to stay abreast of developments at NCAR?

Eric: I had advice from a dean who said, "Leave your office and walk around. Just walk around and interact with people." I'm setting up sessions where I'm going to go division by division and talk to people and get to know people at different levels. But I think we also have to have structural ways to promote communication.

Staff Notes: How did you first get interested in atmospheric science, geology, and oceanography?

Eric: I was interested in marine geology and geophysics. I decided that plate tectonics was fascinating, and so I started to work. Then I decided that there were already too many people working in the area and that I needed to think about what was going to happen after the notion of plate tectonics. I came to the conclusion that how changing mountains and continents influenced ocean-atmosphere circulation was an interesting topic.

Staff Notes: An atmospheric scientist on your thesis committee suggested that you apply for the NCAR Cray Supercomputing Fellowship to learn vector processing. How did you react?

Eric: I thought, "What is he thinking?" There are only a handful of people they're going to take, and they're going to take atmospheric scientists and physical oceanographers—they're not going to take a crazy geologist.

Staff Notes: Obviously, you got the fellowship. How did things unfold?

Eric: I brought with me the research I was working on for my dissertation, and I showed it to different people, talking to people in the climate modeling division. I got a very friendly reception. I was invited back and spent every summer between 1976 and 1980 as a visitor. NCAR scientists were a key part of my dissertation.

Staff Notes: What would you have said if someone told you then that you'd be director of NCAR someday?

Eric: I would have really thought that was unlikely [laughing].

Staff Notes: What appeals to you about living in Boulder?

Eric: Ninety percent of me doesn't care where I live—I care where I work, because I get involved in what I'm doing. But I would say that my wife, Molly, does not share that point of view. She's very happy to be here. I met my wife here in Boulder, got married here, and our two children were

born here. We know Boulder. And we do like a sense of sanctuary where we live, with space and trees around us, and you can have that here.

Staff Notes: What do you like to do outside work?

Eric: I've always loved to play racquetball, and squash is OK. I like hiking and walking, which there's a lot of opportunity for around Boulder.

On the Web

NCAR News Release: Eric Barron to Head National Center for Atmospheric Research

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In this issue...

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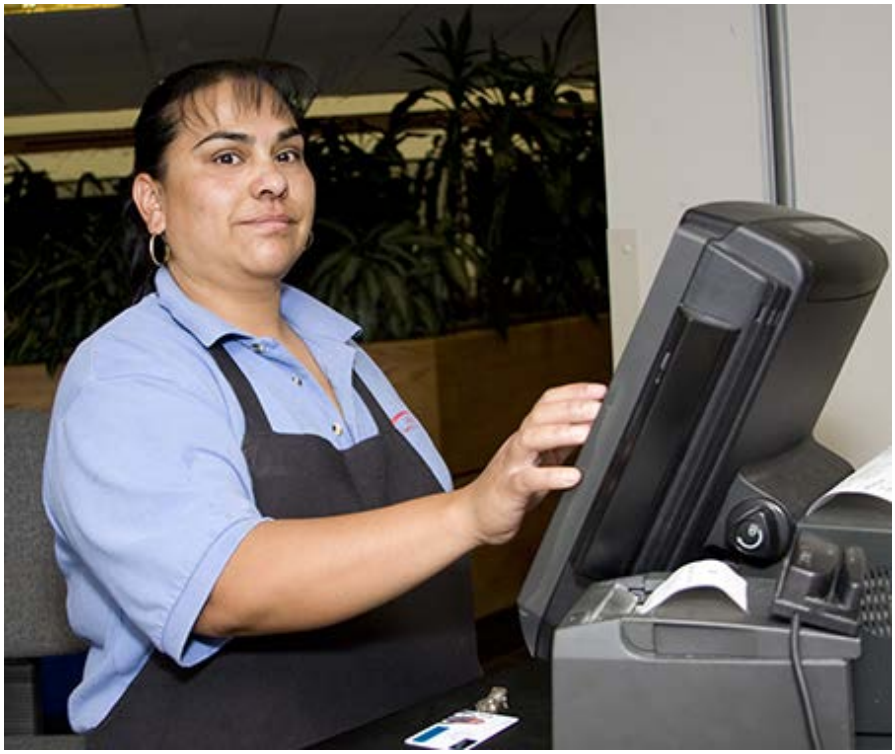
Extra!
Feedback
How to Subscribe
Search

July-August 2008

Rising fuel, food prices affect operations



Norma Valdez (Event Services) rings up purchases at the Foothills cafeteria. UCAR is feeling the pinch of rising food prices.

Along with everyone else, UCAR/NCAR is feeling the pinch at the gas station and grocery store, with the shuttles, cafeteria, security, and other services facing higher costs.

“It’s definitely affecting our business,” says Mari Bradley (Event Services). “Wholesale food prices this year increased almost 8%, and every time we have a delivery, we get charged a gas surcharge now.” And, she notes, “We have a lot of deliveries during the week.”

The gas surcharges, which started in the past few months, run about $3–10 per delivery depending on the vendor.

The increase in specific food prices varies by item, according to Cathy Halvorson. “Meats are somewhat affected, but it’s mostly vegetables like tomatoes,” she says. “Cooking oil with zero transfats has gone from $35 to $52 since last year.”

As of now, Event Services hasn’t raised prices in the cafeteria, but is starting to raise prices on the catering menu. The rising food costs won’t change the fact that the group is transitioning from plastics to biodegradable, compostable materials, which are pricier. “That’s something we’ve made a commitment to because the organization wants to go in that direction, and really the world wants to go in that direction,” Mari says.

Sustainable UCAR tackles energy use

Sustainable UCAR plans to coordinate energy and fuel use reduction options to help lighten the organization's environmental impact while reducing costs on certain energy expenditures. One of the program's initiatives, for example, includes launching an office review program later this year that will helpstaff understand how daily activities translate to resource use and suggest ways to conserve.

For information on sustainability issues at UCAR, including alternative transportation options, recycling, composting, speakers and events, and the in-progress carbon footprint assessment, visit Sustainable UCAR.

Transportation Services, which operates the shuttle system, black bag service, and GSA fleet of vehicles, is also feeling the pain of higher gas costs. UCAR pays a monthly rate plus a mileage-based rate for the GSA fleet, which includes the shuttles. On April 1, the government added a gas surcharge that ranges from 2 to 7 cents per mile until the end of the fiscal year.

"The diesel vehicles have seen the largest increase," says Jean Hancock.

The shuttle service is also experiencing increased ridership, with the number of passengers in May up 25% from last year, the highest monthly increase so far in 2008.

Staff who work in Logistics, which relies on GSA vehicles for all its delivery services, have noticed the increased prices at the pump but haven't cut any of the group's services, which are provided free of chargeback. "We do whatever it takes as far as what people need," says Kerry Slaven. This can include services such as delivering posterboards and other supplies to meetings held off campus. Kerry anticipates a need to increase services if the new data center proposed for Cheyenne is approved by NSF.

Security is also affected directly by gas costs. Although Security Services uses electronic monitoring (cameras, access cards, alarms) as much as possible, it's still necessary for personnel to make rounds between campuses. UCAR provides the vehicles used by AlliedBarton, the contracted security service.

"We haven't done anything to cut back on physical rounds made by security at this point, but every time they get in the vehicle it costs us money directly," says Liz Kriete (SaSS). "It absolutely has an effect on us because we have no place to pass those costs—it's an expense of doing business.

"We haven't cut back on anything so far," she adds, "but that doesn't mean that we won't have to."

Another area where rising fuel prices impact UCAR is travel. UCAR books plane tickets through Boulder Travel and hasn't yet undertaken any analyses of how rising airfares are affecting travel budgets. "We're watching it," says Katy Schmoll, vice president for finance and administration. "We're also working closely with Xcel Energy to monitor our electricity and natural gas costs."

In this issue...

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Extra!
Feedback
How to Subscribe
Search

July-August 2008

Child Care Center earns green recognition

Which bin does this go in? Children at the UCAR Child Care Center demonstrate their recycling skills.

The UCAR Child Care Center is the first among its Colorado peers to be certified through the Eco-Healthy Child Care (EHCC) program.

“The endorsement certified the eco-healthy practices that we’ve been doing, such as recycling materials and avoiding chemicals that are particularly harmful to children,” says Cortney Fillion, the center’s director. “These practices are especially important to implement around children, so that they have a safer, healthier environment.”

The EHCC program, based in Oregon, ensures that child care settings are as environmentally healthy as possible. Facilities qualify as eco-healthy by completing a checklist that highlights 25 steps aimed at reducing children’s exposure to toxins and environmental health hazards. They receive a placard and poster to inform parents and others of their certification.

Cortney says that parents who see the placard are excited to know that the center makes eco-friendly practices a priority. “They’re happy that we’re taking these steps to better the health of the children we care for,” she says.

She and her staff go beyond the practices promoted on the EHCC checklist by recycling ink cartridges, encouraging children to use both sides of their paper, and saving scraps of paper for art projects. One challenge, she says, is that the center is bound by state licensing regulations to use certain products, such as chlorine bleach, that are non-biodegradable. She also wishes the center could recycle

diapers.

In this issue...

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Staff Notes monthly

July-August 2008

"The Hundred Languages of Children"

Childhood education exhibit stops at NCAR

A childhood education exhibit from Italy is on display at the Mesa Lab and Center Green.

NCAR and Boulder Journey School are collaborating to host "The Wonder of Learning—The Hundred Languages of Children," an exhibit that showcases how children engage naturally in the learning process and how this in turn can nurture independent and creative thinking.

Components of the exhibit, which is free and open to the public, will be on display at both the Mesa Lab and Center Green from June 30 to October 20. Afterward, the exhibit embarks on a five-year tour of North America.

The Hundred Languages of Children was conceived and fabricated in Reggio Emilia, Italy. The schools in this region are renowned for an innovative philosophy toward preschool and primary education that developed after World War II. The approach encourages children to take control of the direction of their learning, making discoveries through their senses, environment, and interactions with others. Founders of the approach believe that children have a hundred ways—speech, art, play—to express themselves and communicate.

The exhibit, which includes extensive displays, invites visitors to use audio, video, and interactive features to explore the Reggio Emilia approach to childhood education.

"We're thrilled to be the first North American host of this incredible education exhibit,"

says EO exhibits manager Linda Carbone, adding that NCAR collaborated with Boulder Journey School in 1998 to bring the older edition of the exhibit to Boulder. “The new exhibit is bigger and bolder,” she says.

On the Web

www.ucar.edu/outreach/100languages

Exhibit designers from Italy and staff from Boulder Journey School install one of many exhibit panels at the Mesa Lab.

In this issue...

July-August 2008

A day in the life of a SOARS protégé

Left to right: Asuka Suzuki-Parker, Greg Holland, Roque Cespedes, and Rich Loft.

You've seen them around campus: friendly young faces boarding the shuttles, lunching together in the cafeteria, and borrowing blue bikes. Or maybe they're hovering outside conference rooms, dressed up and nervously reviewing PowerPoint presentations on their laptops.

It's all part of SOARS (Significant Opportunities in Atmospheric Research and Science), a year-round program for undergraduate and graduate students that includes an intensive 10-week summer internship.

To see what a typical day is like for a SOARS protégé, Staff Notes caught up with Roque Cespedes, a senior at the University of Miami who's in his first year of the program. As Roque points out, though, no two days are the same during a SOARS summer—one day he might be in a writing workshop, and the next he's touching snow for the first time.

5:30 a.m. Roque rises early. His mother, who is spending the summer in Boulder with him, helps him prepare for the day. (Due to cerebral palsy, Roque is wheelchair-bound.)

Colorado is a big geographical change for a family that hails from the Dominican Republic and Florida."South Florida is flat with no hills or mountains, and a lot more humid," Roque says. "I like south Florida weather, but I love watching the hills and mountains here in Boulder."

7:30 a.m. Special Transit picks Roque up at the Bear Creek Apartments in Boulder, where the SOARS protégés live during the summer internship program.

About SOARS	**8:00 a.m–12:00 p.m.** Roque

> SOARS is an undergraduate-to-graduate bridge program designed to increase the number of students from underrepresented groups pursuing graduate degrees and careers in the atmospheric and related sciences. The program is equal parts research internship, learning community, and mentoring opportunity. During the summer research internship, protégés are paired with science, writing, and community mentors who guide them through research projects.
>
> This year, SOARS culminates with a public poster session at 4:00 p.m. on August 7 in the Foothills Lab cafeteria.
>
> For more information, visit www.soars.ucar.edu.

reports to work in ESSL/MMM, where he's working with science and research mentor Greg Holland, as well as with Asuka Suzuki-Parker and Chris Davis. His writing and communications mentor is Rich Loft (CISL).

"There are always different tasks to do and it depends on the day, but mostly I'm working on my computer," Roque says.

For his research project, Roque is studying the impacts of climate change on high-elevation precipitation and water supply, focusing on the Rocky Mountains. As a double major in meteorology and applied mathematics, with a minor in Spanish, he aspires to be a meteorologist who works on weather forecasting and climate change.

In addition to his research, Roque typically has various SOARS functions to attend: writing workshops every Thursday, computer classes, leadership training, and more.

12 p.m. Lunch in the Foothills Lab cafeteria with other protégés.

1:00–5:00 p.m. Back to work with research, meetings, and collaborating with other protégés. Roque is in a peer review group with two other protégés, which involves reading each other's papers and providing feedback during writing workshops each week.

5:00 p.m. Time to go home—but that doesn't necessarily mean relax. "Usually in the evenings I'm studying, writing, or doing assignments," Roque says. "It's stressful sometimes."

But it's not without camaraderie. "I visit the apartments of other protégés to chat, or they visit me," he adds.

Weekend: "I try to have a little bit of fun, but often I have to work," Roque says. His weekend activities have included going on a wheelchair-accessible hike with his peer mentor, McArthur (Mack) Jones, and spending time with Joanne Graham (ESSL/CGD), his community mentor.

Roque and Joanne attended the CCSM workshop in Breckenridge, where he saw snow up close for the first time. They're also planning a trip to Pearl Street Mall and a nature hike in the Flatirons.

In this issue...

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Staff Notes monthly

Extra!
Feedback
How to Subscribe
Search

July-August 2008

Connecting science and the media

Journalism fellowship builds dialogue between scientists and reporters

NCAR scientists and visiting journalism fellows share perspectives on science reporting during a round table discussion.

According to recent polls, 90% of scientists think that few members of the press understand the nature of science and technology. On the other side of the fence, 85% of reporters think scientists are somewhat or not at all accessible. To bridge this gap and increase media awareness of research in the atmospheric and Earth science community, the NCAR directorate recently launched its first annual NCAR Journalism Fellowship.

Six journalists, selected competitively from a pool of more than 50 applicants, visited NCAR from June 23 to 27. Representing a variety of media outlets, including television (CNN), newspaper (Sunday London Times), magazine (New Scientist), and digital publications (ScienceNOW and dailyclimate.org), the journalists had the opportunity to attend what participant Phil Berardelli, contributing writer to ScienceNOW, summed up as “grad school, with the best teachers on Earth.”

The fellowship week featured a variety of panels, with topics ranging from discussions of weather, climate, and society to technology transfer breakthroughs, solar dynamics, and polar science. The journalists had opportunities for one-on-one meetings with scientists working within their spheres of interest.

The week’s highlights included touring RAF (EOL’s Research Aviation Facility), listening to

Broadcast meteorologists visit NCAR

Close to 200 weathercasters visited the Mesa Lab on June 27 to learn about ongoing research on weather as well as climate change. The field trip was part of the American Meteorological Society’s

36th Conference on Broadcast Meteorology, held in Denver.

The group was welcomed by UCAR president Rick Anthes, after which Jim Hurrell (ESSL/CGD) presented research on climate, Rebecca Morss (RAL/ISSE) discussed NCAR's Societal Impacts Program, and Brant Foote (RAL) described research applications. The weathercasters also toured the Visualization Lab, learned about COMET modules, and visited "Ask the Expert" tables. Bob Henson (Communications) led a walking tour of the Walter Orr Roberts Weather Trail.

The weathercasters were split into two groups, each getting a half-day at NCAR and a half-day at NOAA. They also had the opportunity to attend a panel discussion about climate change on June 28 in Denver that included Kevin Trenberth and Warren Washington (ESSL/CGD).

presentations by ASP postdoctoral fellows, and attending the final planning meeting of the START08 (Stratosphere-Troposphere Analyses of Regional Transport) field campaign. Another key event was a round table discussion with about a dozen NCAR scientists that provided a forum for delving into concerns that both scientists and journalists grapple with in trying to ensure accurate science reporting.

Throughout the week, and particularly during the round table discussion, both journalists and scientists had opportunities to see science reporting from the other group's perspective. Scientists came away with a better understanding of the changing modes of media in the 21st century (more online content, struggling newspapers and television outlets), media deadlines (quick response times of hours rather than days or weeks), and the value of easy-to-understand graphics for boosting a story. They also learned that stories must answer the perennial reader question, "How will this affect me?," and that some reporters are willing to let scientists review their quotes and research description prior to publication.

In turn, the fellows learned that reluctance on the part of scientists to speak with the media can arise from concern that their work is not ready for prime-time viewing and that scientific culture frowns upon researchers who talk up their work or themselves. Also, many scientists are wary of talking to journalists with limited science background, fearing inaccuracies and omissions of critical details in the final story.

By week's end, a few formerly media-shy scientists were talking about ways to work with journalists, while the fellows went away with a wealth of story ideas, as well as an appreciation for how to make contributing to news stories more appealing to scientists. • *Rachel Hauser, NCAR Directorate*


At left, Phil Berardelli, contributing writer to ScienceNOW; right, Kevin Petty (RAL).

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Staff Notes monthly

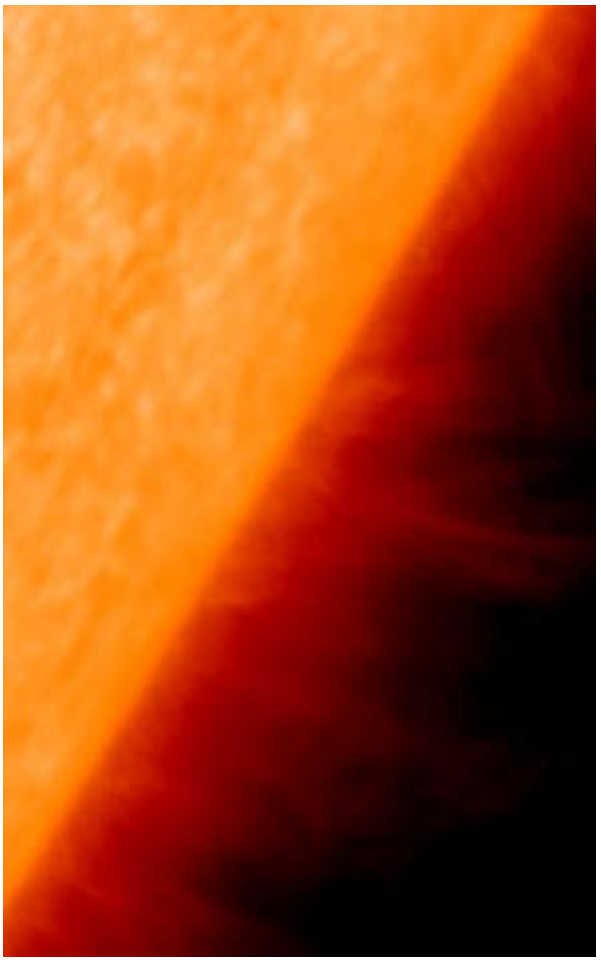
Extra!
Feedback
How to Subscribe
Search

July-August 2008

short takes

An overview of projects throughout the organization

Is the "quiet Sun" a misnomer? The Sun is currently in the minimum of its 11-year cycle, with sunspot counts and other signs of activity as low as scientists have observed in the last 50 years. But this doesn't mean all is calm. **Scott McIntosh** (ESSL/HAO) and colleagues believe the phrase "quiet Sun"—a name given to portions of the solar atmosphere away from sunspots—doesn't adequately describe what is going on in the baseline state of solar activity.



This image from the Solar Optical Telescope, which was built for the Hinode satellite by a U.S.-Japanese consortium that includes NCAR, shows narrow features called spicules streaming outward from the solar surface during the Quiet Sun Characterization Campaign this spring. Scientists are trying to determine how the various types of spicules form and how they relate to solar energy transfer. Click here to see an animation. (Image and animation courtesy Scott McIntosh.)

At the spring meeting of the American Geophysical Union, Scott presented initial results from the Quiet Sun Characterization Campaign, which took place April 10–16 as part of the International Heliophysical Year. The goal was to analyze the coupling between the Sun's dynamic lower atmosphere and corona, assess the flow of energy through an intervening region, and compare results from this solar minimum and the last one. "Our observations may help shed more light on not only chromospheric and coronal heating at solar minimum but also the origins of the fast solar wind," Scott says.

Scott and colleagues drew on high-resolution data from a wide variety of multiwavelength instruments, including several aboard the Hinode satellite. As expected, they found very low levels of activity in the corona, but the atmosphere just below was a place of constant evolution and was far from quiet. There, the team found a multitude of colorfully named phenomena, including spicules, jets, shocks, surges, macrospicules, and blinkers.

All of these are now being linked to the relentless evolution of magnetic fields in the plasma near the Sun's surface, says Scott. "We saw that there is nowhere on the Sun that you can label truly quiet—just areas that display different degrees of activity. Understanding these is allowing us to slowly navigate one of the final frontiers in solar research."

Plants and aspirin. Scientists working on TIIMES's BEACHON study last year in a walnut grove in California (the same site as CHATS) were surprised to measure methylsalicylate being emitted from plants. Methylsalicylate, a plant hormone, is a volatile form of aspirin.

Plants release the chemical when they are under stress from various biological factors, such as large temperature swings or pest infestations. Until now, scientists believed that the chemical was emitted in such small quantities that it couldn't be measured in the atmosphere and didn't play an important role in atmospheric chemistry.

"The main thing we are excited about is that nobody has observed this before in the real atmosphere," says **Thomas Karl** (ESSL/ACD), adding that researchers have documented the process in lab studies. "From our measurements we see methylsalicylate can be emitted in significant quantities."

Thomas, along with **Alex Guenther**, **Andrew Turnipseed**, **Ned Patton**, and **Kolby Jardine**, published the findings online in *Biogeosciences* on June 6.

The chemical serves as a signal between plants. When a stressed plant emits methylsalicylate, nearby plants take it up and convert it to salicylic acid, a closely related substance to aspirin (acetylsalicylic acid). This in turn activates defense mechanisms in those plants—for example, producing chemicals that are toxic to an invader. During CHATS, the stressor was likely drought combined with large temperature swings between night and day, which can damage plant membranes.

Methylsalicylate emitted by plants could affect atmospheric chemistry by impacting the formation of secondary organic aerosols, which have implications for climate. In addition, because stressed plants emit methylsalicylate before visual damage is apparent, the research may give scientists an early warning signal for detecting damage to ecosystems.

"If we're able to measure the chemicals on a large scale in the atmosphere, we'll have a chemical marker for stress which, combined with ecosystem health studies, might provide a chemical way to diagnose the health of plants," Thomas says.

For more about BEACHON (Bio-hydro-atmosphere interactions of Energy, Aerosols, Carbon, H2O, Organics & Nitrogen) visit www.tiimes.ucar.edu/beachon.

In this issue...

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