

Interview with Dr. W. Paul Menzel, Verner Suomi Distinguished Professor, Space Science and Engineering Center, University of Wisconsin

Interviewer: Doria B. Grimes, Senior Analyst, Riverside Technology, Inc.

Grimes: Paul, could you give us some of your impressions of David Johnson and his interactions with Dr. Verner Suomi, and any other recollections that you may have?

Menzel: Thanks for the opportunity to talk about Dave Johnson. In my mind, he was a very special person, and part of the environmental satellite history of the United States. He was a scientist and a science administrator. We do things differently now, and old guys like me, we tend to harken back to the old days and remember them fondly. And, when I remember the old days and the science administration of Dave Johnson, it becomes even fonder. I didn't see him that often because I am out here at Wisconsin, and Dave was an administrator who was located in Washington. But he did come to Madison at least annually, to meet Vern Suomi and they always engaged in discussions about science and also science administration. And then later on he came out here to visit his government group that he had sent to Wisconsin.

So, first to the discussions together with Vern---Dave was a supporter of Vern's. And, although I didn't hear him say it, I heard other people say that he always said to his people, "Vern doesn't write great proposals, but he has good ideas and we should fund him regardless of whether you like the proposal or not." It is not something we are allowed to say now days. But Dave always had some money for Vern's R&D, especially after Vern came up with the Spin-Scan Camera which went up on ATS-I, and the rest is history. That was our first geostationary satellite, and, wow, did that change the way we looked at weather. Vern said, "Now the clouds move and not the satellite."

But to make that possible you needed to do a fair amount of arm twisting at NASA Headquarters - - - another science administrator Homer Newell¹ and Dave Johnson were the persons who made this possible. On very short notice, NASA was adapting their spacecraft and putting in a different payload based on Dave Johnson's confidence in Vern Suomi to the job correctly --- Vern and Bob Parent². Bob Parent was his engineering sidekick that made a lot of this possible at the University of Wisconsin.

I don't know that this fostered the OSIP program, but it certainly a fantastic example of the Operation Satellite Improvement Program where NASA would start demonstrating new technology, and NOAA would then benefit from it in the operations subsequent to the demonstration. I know for sure that after creating the GOES Program, Dave was at the helm of NES³ when we had the VAS

¹ Homer E. Newell

² Robert J. Parent

³ National Environmental Satellite Center was a part of the Environmental Science Services Administration (ESSA) and the predecessor to NOAA/NESDIS.

demonstration⁴ where we took the original geostationary satellites with an infrared and a visible channel, and we adapted it to have 12 infrared channels and one visible. And the VAS program was an operational spacecraft, but it was NASA supporting a modification to this operational instrument under OSIP.

Grimes: VAS. Please spell out the acronym.

Menzel: VISSR stands for visible infrared spin scan camera, the first GOES. And VISSR Atmospheric Sounder was VAS, and the Atmospheric Sounder is the working part of that acronym. We added 11 infrared channels, complementing the infrared window, to make 12 -- so that we could do probing in the vertical of temperature and moisture in the atmosphere. This was done on the operational spacecraft that Dave needed for doing his NESC job at the time. They needed to have pictures every half hour in the visible and IR. But with NASA help, he was able to add these extra spectral channels, and do a demonstration of what was possible from geostationary orbit with respect to temperature and moisture profiles in time sequence.

This was a collaboration on the administrative side between Dave, on the idea side with Vern, and on the science side with Bill Smith⁵. Bill Smith was the workhorse on the VAS demonstration project. And Dave thought that, with Bill's suggestion, they should come up to Wisconsin. So he did the unheard of thing taking a whole group of people and sending them to Wisconsin so they could work with Vern, with a goal that the bridge from research to operations would be shortened.

That was the beginning of the Cooperative Institute here, and, I think, of Cooperative Institutes in general in NESDIS. So this is, again, a science administrator who knows his science but is willing to let his good people go and do their science. And he would do the administration. He would make sure that the OSIP plan was in place and that space was made on the spacecraft so you could put an innovative instrument there.

So, how did I personally meet Dave? He would come up, and he and Suomi would go to lunch. And we used to go to a place called the *Brat und Brau*. And that was exactly what you had. You had a bratwurst and a beer, and also popcorn, and sometimes you had pizzas. And science would be discussed. Families would be discussed, briefly. They were friends. By at the end of a meeting you would end up with notes that Suomi had scribbled down on a napkin or a piece of paper that had food stains all over it. And then these scribbles were the things that he and Dave would have agreed upon should be the goals of the satellite program for NOAA in the future. So an awful lot of science and planning got accomplished at the *Brat und Brau*.

[Shows napkin.]

This is Suomi's writing. And we drank some beer too. So that always helped lubricate the ideas.

⁴ VAS (VISSR Atmospheric Sounder); VISSR – Visible and Infrared Spin Scan Radiometer

⁵ William L. Smith

Grimes: What would be really neat, is to scan this. You have my e-mail address?

Menzel: Sure. I'll scan that and send it to you.

Grimes: Front and back.

Menzel: The back is almost better than the front.

Menzel: I will wave this around tonight if it comes to this. I am doing the open mike during the exhibition⁶.

So I'll just continue this narrative. I'm sort of rolling off all the things that I think of here in response to your one question.

When he sent Bill Smith up here with a group of originally five other scientists, (but it swelled up to as many as 11 federal people working for Dave in what was then established as the Development Lab), he used to come up here and visit. Not just with Bill but with each individual in the group. This is a man who has something like, at that time NESDIS wasn't a thousand people, hundreds of people working for him. And he took the time to come up here, and he would sit in your office and talk to you very quietly for a half hour to an hour. And in the end, he declared that the Development Lab and Bill Smith working with Vern Suomi was a success. He wanted to guarantee that this could continue. So they formalized it with a Memorandum of Understanding (MOU) between the University of Wisconsin and NESDIS. That happened near the end of his time as Director of NESDIS.

These examples: OSIP, enabling his scientists to do their good work, and making sure the administrative support was there for the long run are, I think, very good examples of the kind of administrator Dave was. He was a very polite, quiet man of great achievements. [I have a] tremendous amount of admiration for him as a scientist and as an administrator.

[Stop.]

Grimes: O.K. Let's start that again. You worked for Vern and then you

Menzel: I came to work for Vern when I got my Ph.D. in Physics here. Vern liked to hire physicists and there is a string of them in SSEC. Larry Sromovsky⁷ was the first. Hank Revercomb⁸ was the second. He is now the current Director of the Center. And I was the third. About every year he'd go over to Physics and grab somebody. I was lucky enough to be the third one to be grabbed.

My first project was the VISSR Atmospheric Sounder. So, in getting this arrangement with NASA, the OSIP program, Dave would come up here and discuss some of the issues with Vern and I would be around or I would be invited to go to lunch with them. And that's where we got pretty involved in how were we going to use this.

⁶ *50 Years of Meteorological Satellite Experiments*, sponsored by Space Science and Engineering Center at the University of Wisconsin-Madison, November 2, 2009.

⁷ Lawrence A. Sromovsky

⁸ Henry E. Revercomb

Originally, VAS was only scheduled to be operated by NASA for 79 ½ days. That's a demonstration. NASA does demonstrations. They don't do an operation. And so we created schedules on what we would try to do in those 79 ½ days to prove that this really was something that we wanted to use operationally. And very clearly, with Bill Smith's genius, it became obvious once we launched it that this was useful. It became clear that using the research VAS was something we should do routinely ---maybe not operationally, but routinely. So Dave Johnson then authorized the development of a mode where we got the operational images during the usual time slots, but the other times would be using the full capacity of the instrument. This was called the Transparent VAS mode of operation. And I helped put that in place. And, at the end of that, I got hired by NESDIS to continue doing this thing.

Grimes: On which satellite was it?

Menzel: This would be GOES IV. It was launched in 1980. And we then started demonstrating the utility of the VAS. So to do the demonstration in a routine way, we did the processing here at the University of Wisconsin using the direct receive capability that Vern had put in place. And Dave Johnson authorized the hiring of the Advanced Satellite Products Project, a group of 2 guys plus me, 3 altogether, that would routinely process this data and distribute it over to the National Weather Service stations.

Grimes: Here. You never really moved to Washington.

Menzel: I never did. I just changed hats. I used to work for Vern and then I worked for Dave. I started in 1983. I think Dave had retired from NESIDS at that time.

Grimes: Dave retired in 1982, but he got you on board.

Menzel: He was obviously there to agree to this.

Grimes: Then he worked for UCAR and WMO as a consultant.

Menzel: But of all of my personal encounters with him, I just remember he was a very quiet, unassuming man, very polite, very intelligent. It was always a pleasure to run into him. And he never forgot you. I would say, "Dave, my name is Paul Menzel." He says, "I know."

Grimes: One thing that Gary Davis said is that Dave would go to your office. It wasn't where you had to go to Dave's office.

Menzel: I know. He came and sat here. In fact, if he came before you did, he would just sit in the office and wait for you quietly. He'd have something he was reading. "Oh, I'm sorry I'm late." "No problem. I had something I was reading." ... just very polite.

Grimes: But a brilliant man.

Menzel: Yes.

