

29 November 2010

**Statement by Joshua Wurman concerning VORTEX2 and “Storm Chasers”**

There has been a lot of discussion concerning events during the 2010 tornado season and the relationship between my team, VORTEX2, and the TIV team on the Discovery Channel reality TV show “Storm Chasers.”

**Sean Casey’s Statement:**

I have seen a recent discussion board post by Sean Casey, the leader of the TIV team on “Storm Chasers”, attempting to clarify some misperceptions. I generally agree with what he posted on 27 November but would like to elaborate on some issues related directly to my research program and VORTEX2.

Since I also had a contract with Discovery, I won’t reveal any “secrets” about the production of “Storm Chasers”.

**My Statement:**

“Storm Chasers” is a Reality TV series. It is not a documentary. It is not a news show.

Many reality shows (but I won’t comment on “Storm Chasers” in particular) are dramatized, partially-scripted, series, are entertainment, designed to be exciting, that cover real events and people while including scenes and plot lines and dialog crafted, encouraged and suggested by production crews in order to increase the drama level and entertainment value of the shows. Some of these shows seem to stick pretty close to reality. Some seem to take great dramatic license. When watching any reality show, I retain a healthy skepticism.

Let me go on to specifics concerning the true reality of events in spring 2010:

1. VORTEX2 and I did not, and could not have, imposed any restrictions on any other person or group. Specifically VORTEX2 and I did not, and could not have, imposed a “75 mile limit” on Sean Casey or his TIV team, or compelled them to stop chasing or intercepting tornadoes, or even to drive more safely or conservatively.
2. VORTEX2 and I did not fund or control any funding for “Storm Chasers”, the TIV or the IMAX film. We certainly did not control any “purse strings”.

3. Viewers of Storm Chasers might conclude that drama has been well served by the crafting of entertaining “David vs. Goliath” plot lines with a nimble, successful David and a lumbering, incompetent Goliath.

In true reality, the DOW program (“Goliath”) has collected complex 3D data sets in over 165 tornadoes, many every year, frequently with multiple “Dual-Doppler” radars and other complimentary data. VORTEX2 collected dozens of cutting edge data sets which are now being analyzed. Both the DOW and VORTEX2 programs have been very successful over the years.

Critically, real scientists are certainly not competing with storm chasers. We are doing completely different things. Scientists are collecting specific data which we are analyzing in specific ways to better understand tornadic storms, to lead to better predictability. Some cases in which we see or video a tornado from close up are “failures” for us. Similarly, some cases where we are 5 miles from a tornado and cannot even see it visually are among our best successes.

Personally, I think it is great that storm chasers chase storms, that kayakers kayak, that hikers hike, that bungee jumpers jump, and that bird watchers watch birds. All of these are pursuits of the appreciation and/or experience of nature, beauty, recreation, exercise, excitement, education, and frequently some combination of several of these. When I hike, I am doing something different than a geologist even though we may share the same mountain. Storm scientists are engaged in a different pursuit than storm chasers, even when we’re watching the same storm. In true reality, there is no competition between professional scientists and storm chasers.

4. I have had a long standing relationship with Sean Casey and his TIV project since 2000. This relationship began during Casey’s filming of the IMAX film “Forces of Nature”, and continued during subsequent seasons, including those funded and filmed by National Geographic (a great and quite accurate documentary about both the TIV and DOW efforts called “Tornado Intercept” filmed in 2005) and Discovery Channel.

The reality is that Casey and I have had an excellent relationship for over a decade. In my *off-camera* dealings with him I have found him to be a focused and dedicated professional, and a nice guy. The ethos of his filmmaking endeavor and my scientific data collection have been very compatible. Data collected by the TIV and DOW are being used in rigorous scientific analysis and being published.

5. I have a contractual relationship with Discovery Channel in which I have agreed to be filmed for “Storm Chasers”. To the best of my knowledge no other VORTEX2 PI or institution had any relationship with “Storm Chasers”.
6. I, and several other VORTEX2 PI’s have been engaged as scientific advisers to Casey’s IMAX film project “Tornado Alley”. This means we will advise them concerning the scientific accuracy of “Tornado Alley” and may participate in educational outreach activities related to the film. None of the non-CSWR VORTEX2 PI’s, to my knowledge, have had any other formal relationship with Casey, TIV activities, or “Storm Chasers”.
7. VORTEX2 is a government funded project focused on understanding the processes involved with tornadogenesis. The main goal of VORTEX2’s field phase was to observe both tornadic and non-tornadic thunderstorms in order to collect data which will lead to this better understanding, in a way which will contribute directly to better predictions and warnings of future tornadoes. (please see <http://vortex2.org>)
8. VORTEX2 deployed an unprecedentedly huge array of instruments to observe these storms as they made (or did not make) tornadoes. It has been the overwhelming judgment of the real (not TV) scientific community, and science-funding agencies, guided by extensive peer review, that our understanding of tornadogenesis would be best be improved through the simultaneous, integrated, measurement of 3D winds at different scales (VORTEX2’s 11 mobile radars), thermodynamics (VORTEX2’s 13 mobile mesonets, 24 Sticknets, 16 tornado pods, 4 mobile balloon launchers, and a UAS), and other parameters such as precipitation size and type (8 laser disdrometers, and 6 polarization radars), careful damage surveys, and detailed photogrammetry ...and subsequent analysis and modeling efforts using these integrated data.

We didn’t deploy this huge fleet because it was fun or easy, or because we liked traffic jams, we did it because the scientific community believed that our best hope for understanding tornadogenesis was through the collection of this extensive, diverse, and integrated data.

9. VORTEX2 is a highly collaborative effort. The National Science Foundation (NSF) and the National Oceanic and Atmospheric Administration (NOAA) provided the bulk of the funding. Over a dozen independent institutions and Universities with over two dozen senior researchers (“PI’s”) received independent grants/funding from NSF and NOAA to participate.

There was no “king” of VORTEX2. While I was the lead PI of a planning grant (the VORTEX2 SPO: on line at [vortex2.org](http://vortex2.org)), this was because someone’s name had to go

first on this highly collaborative proposal. VORTEX2 was, in fact, conceived, planned and managed by a Steering Committee consisting of up to eight leading tornado researchers (their links are also on line at vortex2.org). Important decisions were made through a consensus of this Steering Committee and/or the approximately two dozen individual PI's. These included tactical decisions related to when and where to conduct missions, and which storms to target.

10. VORTEX2 is a multi-year project and has, so far, been tremendously successful. The field phase of VORTEX2 was completed in 2010. VORTEX2 intercepted and collected integrated multi-instrument data in approximately 20 tornadic supercells. Equally importantly, VORTEX2 did the same in about 20 supercell thunderstorms which were not making tornadoes. Understanding the differences between the tornadic and non-tornadic storms will lead to increased forecast skill. (You might not see these successes featured on reality TV because they are difficult to make "exciting". To learn more about what the real scientists of VORTEX2 are accomplishing, I recommend watching the Sean Casey IMAX movie "Tornado Alley" in spring 2011.) Analysis of the dozens of terabytes of collected data will take years.

11. Finally, I do not want anything in this long document to be interpreted as a condemnation of Discovery Channel's "Storm Chasers". During the 2006, 2007, and 2008 seasons, prior to VORTEX2, when there was not substantial government funding for my tornado field research, the Discovery Channel's generous support for the DOW program's field work, and equipment upgrades, was critical. We would not have been able to collect data those years without Discovery Channel support. And in 2009 and 2010, they provided less, but still very helpful financial support while I participated in VORTEX2. Discovery Channel has provided more support than any other non-government organization to my research efforts. Important data sets, which I, and other leading researchers, are using in our ongoing efforts to better understand tornadoes and tornadogenesis, were collected thanks to the Discovery Channel's substantial support.