electrostatic corona discharge that early on threatened the viability of the program. As Itek's chief engineer for the Corona camera system, I can attest that although the Drell team was made aware of the problem, neither Sidney Drell nor any member of his team ever visited Itek to observe the phenomenon or sent suggested solutions to Itek.

Wheelon states that the Drell team and Itek engineers traced the problem to the rubber rollers that were used to move film through the camera. In fact, there was never any doubt as to the source of the corona discharge; we could see the discharge by looking through the observation window in the wall of the vacuum chamber. Eliminating the discharge was the challenge, and it was the Itek test and quality control personnel who, after scores of tests, finally found a method of cleaning the rollers and thereby bringing the discharge under control. It was Edward Purcell, a Nobel laureate at Harvard University, who visited Itek and validated Itek's solution.

I first sent Wheelon a letter of correction after he made his camera-fixing claim public at the CIA's May 1995 event honoring the Corona program. I did so again in July 1996. His persistence in misstating history is mystifying.

Frank J. Madden
Quincy, Massachusetts

WHEELON REPLIES: Corona satellite photography was playing a vital role when film darkening was first observed. The problem grew and afflicted more and more film. Having established regular photographic coverage of the USSR and China, President Kennedy and his Cabinet deemed it unacceptable to lose this extraordinary resource. When I became responsible for Corona as the CIA's deputy director for science and technology, Director John McCone made it clear that we must solve the problem—*soon*.

We turned to Itek, which was responsible for camera design and manufacture. CIA program people met repeatedly with Itek engineers to establish a course of corrective action. Itek's response was not reassuring. So McCone and I established a panel of outside experts to examine the problem—in parallel with Itek's efforts. I believed that the key to the problem lay in physics. I therefore asked Sid Drell to lead the effort. His panel included Dow Smith of Itek.

The Drell panel analyzed all possible sources of trouble, eliminating them one by one. The panel and Itek arrived at the same solution at roughly the same time. Both received the thanks of a grateful government. (Incidentally, Ed Purcell was present at our request when Drell gave us his report.)

The Corona camera problem in no way diminishes Itek's extraordinary contribution to national security. Such problems do occur in daring technological efforts. Frank Madden played a leading role in the design of the camera and remediation of its only problem. I sorrow that he continues to ignore the contributions of others.

Albert D. Wheelon
Montecito, California

New Results Are Right on the Quantum Dot

I would like to briefly add some important information to the PHYSICS TODAY story entitled "Experiment Signals a New Phase of Quantum Dot Measurements" that appeared in the January issue (page 19).

Amir Yacoby *et al.*[1] not only proved coherency of electron transport in the quantum dot (as explained in the story) but also pointed out that the phase of the transmission coefficient is periodic—that is, it repeats itself for a large sequence of Coulomb-blockaded peaks. Subsequently, Ralf Schuster *et al.*[2] (whose work is also covered in the PHYSICS TODAY story) reconfirmed this measurement and measured the actual phase itself—in a four-terminal configuration. In the process, they discovered the unexpected abrupt phase slips that take place between Coulomb blockaded peaks.

The work of both groups was theoretically supported all along by the condensed matter theoretical group at the Weizmann Institute of Science. Alex Kamenev, Yuval Oreg, Yoseph Imry, Yuval Gefen, Yehoshua Levinson and Moshe Shechter pointed out the role of the Onsager symmetry in the two-terminal geometry giving rise to the phase rigidity observed experimentally.[3] (The four-terminal measurement is one way to relax this constraint.) Recently, the unexpected periodicity of the measured phase an electron gains in a quantum dot and the abrupt phase slippage have been subjects of theoretical debates. Note in particular the work done by Oreg and Gefen,[4] who were the first to study systematically the effect of strong electron–electron interactions on the phase slippage in the quantum dot.

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Call for Emission Limits Heats Debate on Global Warming

I would like to follow up on your last major story regarding the controversy about global warming stemming from last summer's publication of the "Second Assessment Report" (SAR) of the Intergovernmental Panel on Climate Change (IPCC) (PHYSICS TODAY, August 1996, page 55). Your story focused on the disputed text changes made in the SAR's chapter 8 ("Detection of Climate Change and Attribution of Causes") and reflected the fact that, until then, the controversy had centered on the changes themselves—their legality, authorship, purpose and importance.

After you went to press, however, a far more serious problem arose when statesmen at the July 1996 conference of parties to the UN Climate Treaty in Geneva accepted as a basis for urgent policy action the IPCC's main conclusion, derived from chapter 8, that the "balance of evidence suggests . . . a discernible human influence on global climate." This innocuous-sounding but ambiguous IPCC phrase—which appears to have been based mainly on two research papers by Benjamin Santer *et al.*[1] (Santer was the convening lead author of chapter 8)—was misinterpreted by the Geneva meeting attendees to mean that a major climate catastrophe is upon us.

A "ministerial declaration" by the US and like-minded nations issued at that meeting called for amendments to the current treaty that would mandate "legally binding targets" for emission limits to carbon dioxide—and in effect constrain the generation of energy. Such global controls on energy use would have serious economic consequences, impacting mainly on the world's poor.

In announcing this drastic shift from the current voluntary policies, US Undersecretary of State Timothy Wirth declared, "The science calls