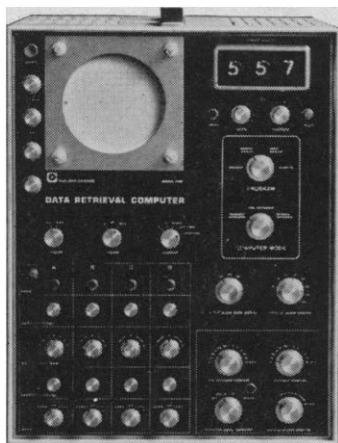


# What price signal averaging?

*Here's a quick look at the real expense—in data as well as dollars—of signal-averaging devices, including our averager, the Model 7100 Data Retrieval Computer.*



**Will you pay for less than excellent resolution?** You will in any signal averager that has a minimum dwell-time per data point of more than 39 microseconds. Resolution, after all, is a function of the number of data points that can be placed within a region of interest. Our Model 7100 Data Retrieval Computer (DRC) uses *all* 400 of its data points for signals occurring within as little as 15.6 milliseconds. The DRC, therefore, gives much better resolution than averagers that use only a fraction of their data points to represent the signal of interest.

**Will you pay for less than total versatility?** You will in any averager that doesn't have the built-in capability—without add-on options—for interval- and time-histogram analysis, as well as transient-averaging. The DRC will operate in *any* of these three modes, which are selected on a front-panel switch.

**Will you pay for less than maximum input sensitivity?** You will in an averager that needs a pre-amplifier to accept low-amplitude input signals. The DRC has 20-millivolt input sensitivity. So, most of the time, the DRC requires *no* added pre-amps.

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## Isaac Newton R.I.P.

I, too, would like to comment on the dates of Newton's birth and death (Letters, 16 Sept. and 21 Oct.). Crew has noted the inscription in Westminster Abbey giving the date of Newton's death as 20 March 1726, Old Style (as Julian dating is called). While he is correct in stating that the year should be 1727, the day of the month should also be changed to 31 March, because of the jump of 11 days which was made when the British Empire switched to the Gregorian calendar in 1752—2 September was immediately followed by 14 September.

As Barr states, Newton's Old Style birthdate was 25 December 1642. However, it was only in the 18th century that the gap between Julian and Gregorian dates was 11 days. In the 17th century, the gap was only 10 days. Thus, Newton's New Style birthdate should be 4 January 1643.

When Russia switched to the Gregorian calendar in the 20th century, the gap was 13 days.

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## A View of the Whole Forest

I agree with Carter's analysis ("Wilderness Act: Great Smoky plan debated," 1 July, p. 39) that park administrations seem to measure success "more by the number of visitors . . . than by the quality of stewardship." This unfortunate preoccupation with numbers has roots in external apathy as well as in empire building. In the defense of natural areas, scientists could provide eloquent alternatives to visitor counts.

A park naturalist's time is indeed taken up by "the shepherding of park visitors." However, the interpretive programs reach visitors who may be unversed in biology, geology, or conservation, but who are still capable of influencing congressmen who might be considering proposals for pork-barrel dams and roads.

Yes, ". . . the job of park naturalist has lost most of its appeal for men with an urge to do scientific research." Although the first park interpreters were university teachers, park work cannot attract the senior molecular biologists and physiologists of today. However, many graduate programs re-

quire some marine biology. Wouldn't a season devoted to exploring a terrestrial biota in a park be rewarding also? A graduate-student ranger-naturalist can serve the public whose taxes may be educating him, while he views the whole forest before permanently roosting on a specialized limb.

Seasonal naturalist experience has convinced me that improvements are needed on both sides. The Park Service should hire receptionists to free naturalists for some field work. The academic community should show more interest when their natural heritage is at stake. Scientific breakthrough: today or tomorrow; natural area preservation: now or never.

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## A 1953 Sighting

Hynek's letter (21 Oct.) makes me feel better. As a fishery biologist, I have almost felt ashamed that I, too, among other scientists, have seen a "flying saucer." In the fall of 1953 in the eastern panhandle of West Virginia, it was there on the horizon, about a mile away—looked 20 to 30 feet (6 to 9 m) in diameter—glistening in the crystal-clear sunny afternoon. It moved vertically from an on-the-horizon position, then to the left, to the right, and finally descended to the horizon. Then with phenomenal speed it took off to the right on a high sweeping curve out of sight. In my car with me were two other fishery biologists, who saw what I saw and we all agreed it was the "flying saucer" often described in the press that year, and probably what a doctor in that part of West Virginia had been reporting. I suggested we report it, but one of my assistants felt it might be classified as "fishy" since it was from three fishery biologists! One of the viewers was a former P-38 pilot.

The result of a scientist's reluctance to report such sightings is that these incidents remain merely conversational comment at parties. Now I feel relieved that Hynek has given the scientific observer freedom to talk about those crazy flying machines.

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