RANDOM SAMPLES

edited by CONSTANCE HOLDEN

Gamma-Ray Mission For ESA

Following 6 weeks of public debate and private deliberation, the European Space Agency (ESA) has decided on its latest science mission: Integral, a gamma-ray observatory satellite to be launched in 2001.

Gamma-ray astronomy, which relies on getting your observatory above the atmosphere, never really took off until until 2 years ago when NASA launched a new generation of instrumentation on its Compton Gamma Ray Observatory (GRO). "It's clearly an area of space science that has been expanding after GRO," says astrophysicist Mike Cruise of Britain's Rutherford Appleton Laboratory.

Integral expects to improve on GRO's resolution by 10- to 50-fold. As gamma rays cannot be focused with lenses or mirrors, Integral has two other types of detectors: The imager cesium-iodide and the spectrometer uses a supercooled germanium crystal. The detectors are set behind masks drilled with a precise pattern of holes. The shadow cast by this arrangement is a "statistical image" of the sky which can be analysed by computer to create a gamma-ray map. Integral will also be able to detect gamma emissions from other parts of the spectrum.

Integral's improved resolution should be able to answer some questions left open by GRO—such as whether the cores of active galaxies contain black holes, and what the sources are of the hundreds of gamma-ray bursts that are observed each year. The spectrometer will also be able to create maps of all of our galaxy's supernovae over the past million years. There have been worries that Integral would cost more than the $390 million ESA has allotted for it, but ESA solved that problem by hitching a ride on a powerful Russian proton launcher that will lift it above Earth's radiation belts, giving it 25% more observing time. In exchange, the Russians will get most of the extra time.

GARY HERBERT/NOAA-CMDL

Dawn smog. Haze layers photographed at sunrise over Alaska's Beaufort Sea in April 1986.

Good News on Arctic Pollution

Thinning ozone notwithstanding, researchers have uncovered one bright environmental spot in the Arctic. Pollution that hangs in layers over the region every spring—the so-called Arctic haze—has now declined to about 50% of what it was a decade ago, according to scientists at the National Oceanic and Atmospheric Administration (NOAA). The haze, first observed in 1957, is a result of pollution from Europe and Asia that migrates north in late winter and early spring, say Barry A. Bodhaine and Ellsworth G. Dutton of NOAA. It grew yearly until 1982, then began a decline that probably stems from Russia's increased reliance on natural gas instead of coal and oil, as well as from tighter controls imposed on western European polluters. The researchers detected the decrease in springtime measurements at the NOAA Climate Monitoring Diagnostics Laboratory in Barrow, Alaska. A less significant decrease in springtime pollution was seen in aerosol monitoring at a station in the town of Alert in Canada's Northwest Territory.

How the diminution of Arctic haze will affect climate is still uncertain. In 1983 NASA scientists factored the Arctic pollution, largely composed of sulfates, into their climate modeling and predicted that absorption of solar radiation would lead to a small Arctic warming. Now, says Bodhaine, all other things being equal, "the warming effect of these particles should be half of what it was in 1983."

Canadian Blood Inquiry

Bowing to public pressure and the advice of a parliamentary committee on health issues, the Canadian government will launch a full-scale public inquiry into the Canadian blood system in September. Its purpose: to shed light on how some 1000 Canadians with HIV picked up the virus from blood and blood products they received prior to 1986. The Canadian Red Cross has been criticized for taking 8 months to put a nationwide HIV-screening program into effect in 1986 even though the U.S. had approved and promptly implemented a procedure in 1985. There were also long delays in implementing heat-treatment of blood products for hemophiliacs. "I listened, I heard, and I learned that ...public confidence in the blood system has been profoundly shaken," said Benoit Bouchard, minister of National Health and Welfare, last month. "When that happens, we must act." Critics, such as the Canadian Hemophilia Society, have kept up the pressure despite the fact that the government last winter set up a new, allegedly super-efficient Canadian Blood Agency (*Science*, 18 December 1992, p. 1878). The health ministry is yet to announce who will conduct the new investigation.

The committee's report calls for recommendations on how to revamp the nation's entire system of blood collection and distribution, which is still an administrative hodgepodge involving all 12 provincial and territorial governments. The report also suggests that all Canadians who received blood transfusions between 1980 and 1985—as many as 1.5 million—be tested for HIV, and that a new federal compensation package for the recipients of tainted blood be developed.

The report does not address whether Canadian officials bear legal responsibility for delaying the use of testing and treatment of the blood supply. In France last year, government officials were convicted for distribution of HIV-contaminated blood.

Revising Psychiatric Diagnoses

It's time for yet another revision of psychiatry's bible, the Diagnostic and Statistical Manual, currently known as DSM III-R. A committee of the American Psychiatric Association (APA) has come up with proposed changes for DSM-IV, to be voted on this summer by the APA board. The committee aims to make the tome more readable and precise—and more politically sensitive. For example, DSM-IV will discuss the "role of culture" in diagnostic assessments, and will describe different ways various ethnic groups express psychiatric symptoms, says Allen Frances, chairman of the psychiatry department at Duke University, who is heading up the revision effort.

Feminist critics have also gained more say since the last revision 7 years ago, when they attacked several proposed new diagnoses. One was "premenstrual dysphoric disorder" (PDD), which, they charged, sounded a lot like blaming female behavior on "raging hormones." Another,

"self-defeating personality disorder" had a lot of support among psychiatrists but was attacked as describing behavior that might be adaptive to a bad environment or secondary to another psychiatric problem. That category has now been completely scrapped. But the committee still plans to list PDD—a severe problem not to be confused with the more common premenstrual syndrome—in DSM-IV as a potential future diagnosis pending more research. Some other candidates:

- Mild cognitive disorder (associated with a central nervous system problem; often found among HIV-positive patients)
- Factitious disorder by proxy (Factitious disorder is when a person generates symptoms of illness to get attention; "proxy" refers to the fact that some 70 cases have been observed where people make their children appear ill.)
- Dissociative trance disorder (seen in people from Third World countries)
- Mixed anxiety-depressive disorder
- Medication-induced movement disorders (such as Parkinsonism from antischizophrenia drugs)
- Caffeine withdrawal
- Binge eating disorder
- Telephone scatalogia (dirty phone calls)

Frances says his committee has received hundreds of suggestions for new diagnoses, but the revisers are being conservative—the main new diagnostic category is "bipolar II" disorder, which is manic depression featuring hypomania—mild mania rather than the full-blown kind.

Latin Science: What to Do?

Latin American science is far from a thriving endeavor, as scientists heard at a AAAS-sponsored conference held in Washington, D.C. last month. At the meeting, on "New Initiatives in Pan-American Science Collaboration," 26 delegates from 11 countries heard about a poll of Venezuelan scientists, published last year in the international journal *Scientometrics*, that may reflect the situation in many nations south of the border. When asked which journals they consulted most often, 70% of the respondents said they resorted to American or British publications. Only 13.2% cited Latin American publications—two-thirds of them Venezuelan. And the great majority—61.1%—said the U.S. journals are where they aspire to publish (Venezuela was runner-up at 15%).

Isolation and underfunding are the plagues that bedevil Latin American scientists, said the delegates. But there's no consensus on the proper cures. Many support the creation of a Pan-American Foundation (funded by some international agency) that would act like a hemispheric National Science Foundation. Others want a grant program run by Interciencia, a consortium of the Latin American counterparts to AAAS, rather than by a new group. In the end, participants took the course of least resistance: they recommended the establishment of a steering committee, which will meet every 3 to 6 months to investigate how to set up a Pan American Foundation. But some delegates were skeptical even of this modest plan. What's really needed, said Ennio Candotti, president of the Brazilian Society for the Progress of Science, is a political base to lobby for increased scientific funding. As he commented in Spanish: "I still have the uneasy feeling that the action we're recommending is weak."

Profile of the Aspiring Physician

In 1989, worried about the sharp drop in medical school applicants over the previous few years, the Association of American Medical Colleges commissioned a poll to find out what attitudes led college students "toward or away" from medical careers. The poll, conducted in early 1990 and just published in the May issue of *Academic Medicine*, found the main reason people don't go to medical school is the most obvious one: They're not interested. But those who are emerge as a very highly motivated lot: a group of 500 medical school applicants were actually more altruistically inclined and less driven by lust for wealth than either a group of 277 qualified nonapplicants (based on scores on the Medical College Admissions Test) or a national cross-section of 1003 undergraduates. Now, it seems, medical schools' worries may have been premature. Despite the heavy stress and expense of medical school, as well as increased government regulation, the applicant pool has been steadily rising: The number of 1993 applicants is expected to break the record of 42,624 set in 1974.

Attitudes Toward Careers in Medicine

	% cross-section	% non-applicants	% applicants
Statements Respondents Agreed With			
Medicine is most important profession	62	47	66
Physicians have become more employees and less professionals	29	36	47
Almost all physicians earn a lot	66	53	47
Risk of malpractice suits outweighs appeal of medicine	32	44	16
Being a doctor takes too much time	63	70	47
Physicians are too specialized	57	47	38
Too much government regulation	*	54	71
Medical education takes too long	53	56	37
Medical education too stressful	71	67	16
Medical education too expensive	70	51	*

* = not available

BETTMANN ARCHIVES

Amundsen. No dead reckoning.

More Doubt Cast on Peary's Claim

An 80-year-old dispute over Robert Peary's claim to have been the first to reach the North Pole has taken a new twist. Fresh evidence about Norwegian explorer Roald Amundsen—the first to reach the South Pole—has undermined a key tenet of Peary's claim.

Ted Heckathorn, a real estate agent and amateur student of polar explorations, recently discovered a Norwegian edition of a book by Amundsen describing his own record-setting trek, according to *The Washington Post*. Unlike English editions, this one contains a reproduction of Amundsen's longitudinal (East-West) sextant readings.

The significance of this is that Peary claimed to have reached the North Pole by dead reckoning in the last 135 miles. Longitudinal sightings, he said, would be time-consuming and unnecessary; yet he was unable to provide substantial evidence of his alternate method of navigating. Many historians had read the English edition of Amundsen's book and assumed that since it makes no mention of longitudinal sightings, Amundsen had made none and that polar navigation was indeed possible without them.

Skeptics, however, have long argued that it would have been almost impossible for Peary to have reached the Pole as quickly as he claimed without longitudinal navigation (*Science*, 3 March 1989, p. 1131). Now that Heckathorn has shown that Amundsen took such measurements, Peary's claims become all the more suspect.