Random Samples:

Danger on the Job

Astronomy may not seem like a very dangerous profession. But astronomers die on the job a lot more often than do numerous other white-collar professionals, including sales managers, veterinarians, physical education teachers, and professional football players.

So says a study by J. Paul Leigh of San Jose State University. Leigh analyzed the number of job-related deaths each year per 100,000 U.S. population for each of 347 occupations. The deaths were reported in worker compensation claims filed between 1976 and 1980—the most recent data available.

The list of the 35 most dangerous professions is divided into blue-collar and white-collar jobs. Inclusion anywhere in the top 35 indicates a relatively high risk, Leigh says, given the large number of professions examined.

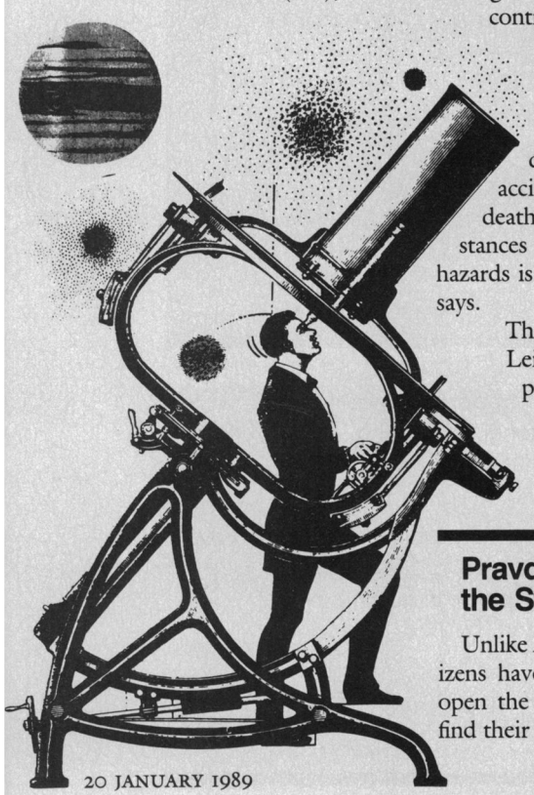
Science jobs among the 35 riskiest white-collar jobs are: geologist (9.5 per 100,000), agricultural scientist (9.0), physicist or astronomer (7.6), science technician (6.7), and chemist (4.2), ranked 4th, 5th, 7th, 13th, and 31st, respectively. The only jobs ranking ahead of geologist are airplane pilot (97), office helper or messenger (14.5), and sales manager or department head for a retail store (12.3).

Clearly, scientists have safer careers than do timber-cutters and loggers (129), the most dangerous blue-collar job, and safer even than loom operators (12.5), the 35th entry on the blue-collar list. Still, Leigh says he was "really surprised at the science jobs in the top 35. Some of it is difficult to explain."

Some of it isn't. The five leading causes of job-related death are motor vehicle accidents, falls, heart attacks, industrial equipment accidents, and homicides. "Anytime your job involves getting into a car, your risk goes up," Leigh reports. Thus, geologists who spend a lot of time driving to sites so they can clamber around mountains expose themselves to the two highest risks. It's also true that in a population with relatively few members (such as physics and astronomy) even one job-related death can loom large in Leigh's analysis.

Leigh admits there is great controversy over both the definition and the actual number of job-related deaths. Most job-related deaths are caused by accidents; the number of deaths due to toxic substances and other workplace hazards is largely unknown, he says.

The moral of the story, Leigh says, is that people often don't fully understand the risks of their jobs until it's too late.



Pravda Heads for the Stars

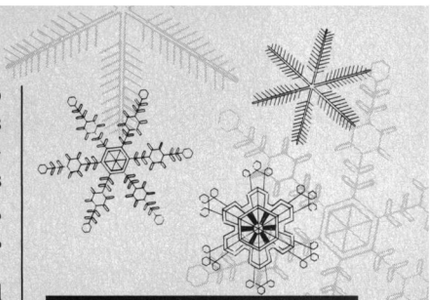
Unlike Americans, Soviet citizens have never been able to open the daily newspaper and find their horoscope written by a "scientific" astrologer. No friend to religion, Marxism has been equally harsh on astrology, which it traditionally has termed a "false science." Now, in a burst of glasnost giddiness, those days are gone.

The *Washington Post* reported on 10 January that *Moskovskaya Pravda*, the official organ of the Moscow Communist Party, has begun featuring a regular astrology column by one Eremei Parnov, described as "a specialist in the arts of white, black, and other magic," and as "master of the magical sciences." The feature seems to be in response to a large and growing interest in astrology and other pseudosciences in the Soviet Union. The *Post* speculates that astrology provides an escape from the grim drudgery of daily life in the Soviet Union.

But that does not explain astrology's continued popularity in Western countries. Although moribund at the beginning of the century, astrology has grown to become a fixture of American life, reportedly even influencing First Lady Nancy Reagan. Some 1200 American newspapers regularly run astrology columns, according to Paul Kurtz, chairman of the Committee for the Scientific Investigation of Claims of the Paranormal. CSICOP repeatedly has asked newspapers to label the columns as entertainment features that have no basis in scientific fact. Unfortunately, Kurtz says, only about 30 newspapers in the United States have done so.

Kurtz explains astrology's popularity as an expression of what he calls the "transcendental temptation. It's nice to think your destiny is fated in some way." A CSICOP trip to the People's Republic of China in April revealed the same fascination with astrology and the paranormal, Kurtz says.

The first column by Parnov, the *Post* reports, predicts that the conjunction of the planet Saturn and the Year of the Snake will make 1989 a good year for glasnost and the Soviet environment.



Another Snow Job

No two snowflakes are alike. That's a "bit of folk wisdom that is generally accepted even among those few regarded as experts in the subject," says Nancy Knight, a researcher at the National Center for Atmospheric Research in Boulder, Colorado.

So much for folk wisdom. As part of a study of cirrus clouds for NASA, Knight found two crystals with identical structures. During a research flight into a Wisconsin snowstorm, she collected some snowflakes on a glass slide coated with oil. More than a year later she reexamined the photos of the flakes and noted the similarity. Not only that, the shape of the crystals—which have thick asymmetrical hollow columns in the center—is unlike anything she's observed before or found in the literature. She reported her findings in the May *Bulletin of the American Meteorological Society*. With the coming of colder weather, interest in her findings has been, well, snowballing.

Crystals such as Knight found begin as solid hexagonal prisms and, due to the effects of temperature, humidity, fall rate, and orientation of their fall, develop hollows in their centers. That happens because growth on a crystal's face is faster on the edges than at the center. Past observations have shown that the hollows are symmetrical on both ends of the crystal. The hollows Knight found are not, suggesting that the crystals did not fall horizontally, as usual, but vertically.

The old folk wisdom may still have a basis, Knight said. It's possible that at the *molecular* level no two snowflakes are alike.

■ **Gregory Byrne**