

## No EM detected in ESP study

Extrasensory phenomena may represent nothing more than a bag of conjurer's tricks, but attempts to explain such phenomena can turn into a bag of worms. As soon as scientists and magician consultants explain away some alleged psychic phenomenon, another one appears. E. Balanovski and J.G. Taylor of King's College, London, take a different approach. Instead of trying to explain what ESP is, they attempt to show what it is not. They have deduced that electromagnetic (EM) radiation "is the only known force that could conceivably be involved," and after three years of testing they report in the Nov. 2 NATURE "no abnormal EM signals during the occurrence of supposed ESP phenomena."

Attempts to link EM and ESP go back at least 45 years, but Balanovski and Taylor say that the various tests were unconfirmed, lacking in statistical significance or excluded some portion of the EM spectrum. For their own work they used 14 types of EM detectors, covering a wide range of frequencies, together with two videotape cameras, one to keep a continuous record of subjects' performances, the other to record the readouts of the detectors.

Five phenomena were investigated: psychokinesis (movement of objects without physical contact), metal bending, psychic healing, dowsing and telepathy. In all tests, all subjects always claimed to be in a good psychic state.

One test of psychokinesis involved attempts to rotate a needle suspended from a thread inside a clear cylinder. Subjects were allowed to move their hands and wrists back and forth around the cylinder about 5 cm from it. In 12 sessions the subjects produced a 60° average rotation of the needle, but when an antistatic ointment was rubbed on the cylinder the phenomenon vanished, indicating, say the researchers, "that the effect was due to charge induced on the needle from the outside surface of the cylinder." Videotape analysis showed the subjects inadvertently touching the cylinder, and further tests showed that the amount of rotation was correlated to the amount of charge on the surface of the cylinder. Other investigations of alleged psychokinesis were similarly explained, and no abnormal EM radiation was found to be involved.

The metal benders (68 subjects, 268 trials) were unable to perform their magic while the video machines were on, but when they performed under less rigid conditions "they sometimes were apparently successful." Metal bending occurred (paperclips, spoons, and so on), but no unusual EM emissions from the subjects' bodies were detected over the entire spectrum. Therefore, say the researchers, EM

radiation cannot explain metal bending — which occurred only under relaxed conditions.

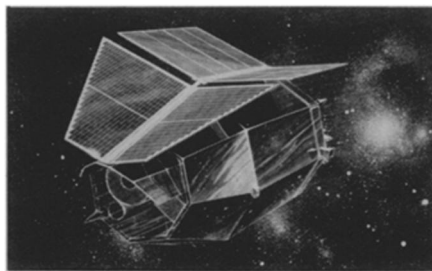
Tests of psychic healing (laying on of hands) involved attempts to detect EM coming from the "healer" as well as "patients" ability to detect EM radiation. Results were negative on both counts. The researchers conclude that faith healing can be explained by a "purely (albeit complex) psychological effect of the healer on the patient."

Dowsing (a sudden flicking of a rod or rotation of a pendulum when the dowser reaches a place where an object being dowsed is supposedly located) was explained as "muscular twitches brought about by subconscious mental activity." The EM radiation emitted was the same as background levels observed before and after each dowsing session.

All attempts at telepathy (mind reading) were unsuccessful, and no EM signals other than background were observed.

In conclusion: Faith healing, psychokinesis and dowsing were explained in normal scientific terms, telepathy was not demonstrated and metal bending was not observed under controlled conditions. And throughout the experimentation there was a consistent lack of any unusual type of EM radiation. □

## HEAO-2 launched



The first High Energy Astronomy Observatory satellite, HEAO-1, was sent aloft on Aug. 12, 1977, to search the sky for the X-ray sources that comprise one of the newest branches of astronomy. Still at work, it is believed by now to have catalogued as many as 1,500. This week, on Nov. 13, HEAO-2 was launched to take detailed looks at the targets its predecessor found. The 3,150-kilogram satellite, 5.8 meters long, consists of a central telescope with five instruments mounted around it to take wide-angle or high-resolution images and to measure broad-band spectra or individual spectral lines. While HEAO-1 tumbles slowly end over end (at about two revolutions per hour) in orbit for its surveying mission, HEAO-2 can be aimed at selected targets to position its telescope, which has a resolution of 1 to 2 seconds of arc. In 1979, NASA plans to launch HEAO-3, last in the series, to survey cosmic-ray and gamma-ray sources, and the agency hopes later to fly an aimable gamma-ray observatory satellite. □

NOVEMBER 18, 1978

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