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Objections to Astrology

A STATEMENT BY 186 LEADING SCIENTISTS

Scientists in a variety of fields have become concerned about the increased acceptance of astrology in many parts of the world. We, the undersigned—astronomers, astrophysicists, and scientists in other fields—wish to caution the public against the unquestioning acceptance of the predictions and advice given privately and publicly by astrologers. Those who wish to believe in astrology should realize that there is no scientific foundation for its tenets.

In ancient times people believed in the predictions and advice of astrologers because astrology was part and parcel of their magical world view. They looked upon celestial objects as abodes or omens of the Gods and, thus, intimately connected with events here on earth; they had no concept of the vast distances from the earth to the planets and stars. Now that these distances can and have been calculated, we can see how infinitesimally small are the gravitational and other effects produced by the distant planets and the far more distant stars. It is simply a mistake to imagine that the forces exerted by stars and planets at the moment of birth can in any way shape our futures. Neither is it true that the position of distant heavenly bodies make certain days or periods more favorable to particular kinds of action, or that the sign under which one was born determines one's compatibility or incompatibility with other people.

Why do people believe in astrology? In these uncertain times many long for the comfort of having guidance in making decisions. They would like to believe in a destiny predetermined by astral forces beyond their control. However, we must all face the world, and we must realize that our futures lie in ourselves, and not in the stars.

One would imagine, in this day of widespread enlightenment and edu-

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cation, that it would be unnecessary to debunk beliefs based on magic and superstition. Yet, acceptance of astrology pervades modern society. We are especially disturbed by the continued uncritical dissemination of astrological charts, forecasts, and horoscopes by the media and by otherwise reputable newspapers, magazines, and book publishers. This can only contribute to the growth of irrationalism and obscurantism. We believe that the time has come to challenge directly, and forcefully, the pretentious claims of astrological charlatans.

It should be apparent that those individuals who continue to have faith in astrology do so in spite of the fact that there is no verified scientific basis for their beliefs, and indeed that there is strong evidence to the contrary.

Bart J. Bok, *emeritus*
professor of astronomy
University of Arizona

Lawrence E. Jerome
science writer
Santa Clara, California

Paul Kurtz
professor of philosophy
SUNY at Buffalo

NOBEL PRIZEWINNERS

Hans A. Bethe, *professor emeritus of physics,*
Cornell

Sir Francis Crick, *Medical Research Council,*
Cambridge, England

Sir John Eccles, *distinguished professor of*
physiology and biophysics, SUNY at
Buffalo

Gerhard Herzberg, *distinguished research*
scientist, National Research Council of
Canada

Wassily Leontief, *professor of economics,*
Harvard University

Konrad Lorenz, *univ. prof., Austrian*
Academy of Sciences

André M. Lwoff, *honorary professor, Institut*
Pasteur, Paris

Sir Peter Medawar, *Medical Research*
Council, Middlesex, Eng.

Robert S. Mulliken, *dist. prof. of chemistry, U.*
of Chicago

Linus C. Pauling, *professor of chemistry,*
Stanford University

Edward M. Purcell, *Gerhard Gade univ. prof.*
Harvard Univ.

Paul A. Samuelson, *professor of economics,*
MIT

Julian Schwinger, *professor of physics, U. of*
Calif., Los Angeles

Glenn T. Seaborg, *univ. professor, Univ. of*
Calif., Berkeley

J. Tinbergen, *professor emeritus, Rotterdam*

N. Tinbergen, *emer. professor of animal be-*
havior, Oxford Univ.

Harold C. Urey, *professor emeritus, Univ. of*
Calif., San Diego
George Wald, *professor of biology, Harvard*
University

George O. Abell, *chmn., Dept. of Astron., U.*
of Cal., Los Angeles

Lawrence H. Aller, *professor, Univ. of Calif.,*
Los Angeles

Edorato Amaldi, *prof. of physics, University*
of Rome

Richard Berendzen, *dean, Coll. of Arts and*
Sci., American Univ.

William P. Bidelman, *professor, Case Western*
Reserve Univ.

Jacob Bigeleisen, *professor, University of*
Rochester

D. Scott Birney, *prof. of astronomy, Wellesley*
College

Karl-Heinz Böhm, *professor, University of*
Washington

Lyle B. Borst, *prof. of physics and astronomy,*
SUNY at Buffalo

Peter B. Boyce, *staff astronomer, Lowell*
Observatory

Harvey Brooks, *prof. of technology and public*
policy, Harvard

William Buscombe, *prof. of astronomy,*
Northwestern Univ.

Eugene R. Capriotti, *prof. of astronomy, Ohio*
State Univ.

H. E. Carter, *coord. of interdisciplinary pro-*
grams, U. of Arizona

J. W. Chamberlain, *prof. of astronomy, Rice*
University

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- Von Del Chamberlain, *Smithsonian Institution*
 S. Chandrasekhar, *prof. of astronomy, Univ. of Chicago*
 Mark R. Chartrand III, *chmn., Hayden Planetarium*
 Hong-Yee Chiu, *NASA*
 Preston Cloud, *prof. of geology, U. of Cal., Santa Barbara*
 Peter S. Conti, *prof. of astrophysics, Univ. of Colorado*
 Allan F. Cook II, *astrophysicist, Smithsonian Observatory*
 Alan Cottrell, *master, Jesus College, Cambridge, England*
 Bryce Crawford, Jr., *prof. of chemistry, Univ. of Minnesota*
 David D. Cudaback, *research astron., U. of Calif., Berkeley*
 A. Daigamo, *prof. of astronomy, Harvard*
 Hallowell Davis, *Central Inst. for the Deaf, Univ. City, Mo.*
 Morris S. Davis, *prof. of astronomy, Univ. of No. Carolina*
 Peter van de Kamp, *director emeritus, Sprout Observatory*
 A. H. Delsemme, *prof. of astrophysics, Univ. of Toledo*
 Robert H. Dicke, *Albert Einstein prof. of science, Princeton*
 Bertram Donn, *head, Astrochem. Br., Goddard Space Cen., NASA*
 Paul Doty, *prof. of biochemistry, Harvard*
 Frank D. Drake, *dir., Natl. Astron. and Ionosphere Ctr., Cornell*
 Lee A. DuBridge, *pres. emeritus, Calif. Inst. of Technology*
 H. K. Eichhorn-von Wurmb, *chmn., Dept. of Astron., U. of S. Fla.*
 R. M. Emberson, *dir., Tech. Services Inst. of E. and E. Engineers*
 Howard W. Emmons, *prof. of mechanical engineering, Harvard*
 Eugene E. Epstein, *staff scientist, The Aerospace Corp.*
 Henry Eyring, *distinguished prof. of chemistry, Univ. of Utah*
 Charles A. Federer, Jr., *president, Sky Pub. Corp.*
 Robert Fleischer, *Astronomy Section, National Science Foundation*
 Henry F. Fliegel, *technical staff, Jet Propulsion Laboratory*
 William A. Fowler, *institute prof. of physics, Calif. Inst. of Tech.*
 Fred A. Franklin, *astronomer, Smithsonian Astrophysical Obser.*
 Laurence W. Fredrick, *prof. of astronomy, U. of Virginia*
 Riccardo Giacconi, *Center for Astrophysics, Cambridge, Mass.*
 Owen Gingerich, *prof. of astronomy, Harvard*
 Thomas Gold, *professor, Cornell*
 Leo Goldberg, *director, Kitt Peak National Observatory*
 Maurice Goldhaber, *Brookhaven National Laboratory*
 Mark A. Gordon, *Natl. Radio Astronomy Observatory*
 Jesse L. Greenstein, *prof. of astrophysics, Cal. Inst. of Tech.*
 Kenneth Greisen, *prof. of physics, Cornell*
 Howard D. Greyber, *consultant, Potomac, Md.*
 Herbert Gursky, *astrophysicist, Smithsonian Institution*
 John P. Hagen, *chmn., Dept. of Astronomy, Penn. State Univ.*
 Philip Handler, *president, National Academy of Sciences*
 William K. Hartmann, *Planetary Science Inst., Tucson, Arizona*
 Leland J. Haworth, *spec. assist. to the pres., Associated Univs.*
 Carl Heiles, *prof. of astronomy, U. of Cal., Berkeley*
 A. Heiser, *director, Dyer Observatory, Vanderbilt University*
 H. L. Helfer, *prof. of astronomy, Univ. of Rochester*
 George H. Herbig, *astronomer, Lick Observatory, U. of Cal.*
 Arthur A. Hoag, *astronomer, Kitt Peak Natl. Observatory*
 Paul W. Hodge, *prof. of astronomy, Univ. of Washington*
 Dorrit Hoffleit, *director, Maria Mitchell Observatory*
 William E. Howard III, *Natl. Radio Astronomy Observatory*
 Fred Hoyle, *fellow, St. John's College, Cambridge U.*
 Nancy Houk, *Dept. of Astronomy, Univ. of Michigan*
 Icko Iben, Jr., *chmn., Dept. of Astronomy, U. of Illinois*
 John T. Jeffries, *director, Inst. for Astronomy, U. of Hawaii*
 Frank C. Jetner, *Dept. of Astronomy, SUNY at Albany*
 J. R. Jokipii, *prof. of planetary sciences, Univ. of Arizona*
 Joost H. Kiewiet de Jonge, *assoc. prof. of astron., U. of Pittsburgh*

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- Kenneth Kellermann, *Natl. Radio Astronomy Observatory*
 Ivan R. King, *prof. of astronomy, U. of Cal., Berkeley*
 Rudolf Kompfner, *professor emeritus, Stanford University*
 William S. Kovach, *staff scientist, General Dynamics/Convair*
 M. R. Kundu, *prof. of astronomy, Univ. of Maryland*
 Lewis Larmore, *dir. of tech., Office of Naval Research*
 Kam-Ching Lung, *dir., Behlen Observatory, Univ. of Nebraska*
 I. M. Levitt, *dir. emer., Fels Planetarium of Franklin Institute*
 C. C. Lin, *professor, MIT*
 Albert P. Linnell, *professor, Michigan State Univ.*
 M. Stanley Livingston, *Dept. of Physics, MIT*
 Frank J. Low, *research prof., University of Arizona*
 Willem J. Luyten, *University of Minnesota*
 Richard E. McCrosky, *Smithsonian Astrophysical Observatory*
 W. D. McElroy, *Univ. of Calif., San Diego*
 Carl S. Marvel, *prof. of chemistry, Univ. of Arizona*
 Margaret W. Mayall, *consul., Am. Assoc. of Variable Star Obser.*
 Nicholas U. Mayall, *former dir., Kitt Peak Natl. Observatory*
 Donald H. Menzel, *former director, Harvard College Observatory*
 Alfred H. Mikesell, *Kitt Peak Natl. Observatory*
 Freeman D. Miller, *prof. of astronomy, Univ. of Michigan*
 Alan T. Moffet, *prof. of radio astron., Calif. Inst. of Technology*
 Delo E. Mook, *assist. prof. of physics and astronomy, Dartmouth*
 Marston Morse, *prof. emer., Inst. for Adv. Study, Princeton*
 G. F. W. Mulders, *former head, Astron. Section, NSF*
 Guido Münch, *prof. of astronomy, Cal. Inst. of Technology*
 Edward P. Ney, *regents prof. of astronomy, Univ. of Minn.*
 J. Neyman, *director, statistical lab., Univ. of Cal., Berkeley*
 C. R. O'Dell, *prof. scientist, Large Space Telescope, NASA*
 John A. O'Keefe, *Goddard Space Flight Ctr., NASA*
 J. H. Oort, *dir., University Observatory, Leiden, Netherlands*
 Tobias C. Owen, *prof. of astronomy, SUNY at Stony Brook*
 Eugene N. Parker, *prof. of physics and astronomy, U. of Chicago*
 Arno A. Penzias, *Bell Laboratories*
 A. Keith Pierce, *solar astronomer, Kitt Peak National Observatory*
 Daniel M. Popper, *professor of astronomy, UCLA*
 Frank Press, *professor of geophysics, MIT*
 R. M. Price, *radio spectrum manager, Natl. Science Foundation*
 William M. Protheroe, *prof. of astronomy, Ohio State University*
 John D. G. Rafter, *Dept. of Astronomy, Univ. of Calif., Irvine*
 Robert S. Richardson, *former assoc. dir., Griffith Observatory*
 A. Marguerite Risley, *prof. emer., Randolph-Macon College*
 Franklin E. Roach, *astronomer, Honolulu, Hawaii*
 Walter Orr Roberts, *Aspen Inst. for Humanistic Studies*
 William W. Roberts, Jr., *associate prof., University of Virginia*
 R. N. Robertson, *Australian National University*
 James P. Rodman, *prof. of astronomy, Mt. Union College*
 Bruno Rossi, *prof. emeritus, MIT*
 E. E. Salpeter, *professor, Cornell*
 Gertrude Scharff-Goldhaber, *physicist, Brookhaven Natl. Lab.*
 John D. Schopp, *prof. of astronomy, San Diego State University*
 Julian J. Schreuer, *prof. of astronomy, Valdosta State College*
 E. L. Scott, *professor, University of California, Berkeley*
 Frederick Seitz, *president, The Rockefeller University*
 C. D. Shane, *Lick Observatory*
 Alan H. Shapley, *U.S. Dept. of Commerce, NOAA*
 Frank H. Shu, *assoc. prof. of astronomy, Univ. of Cal., Berkeley*
 Bancroft W. Sitterly, *prof. emer. of physics, American Univ.*
 Charlotte M. Sitterly, *Washington, D. C.*
 B. F. Skinner, *prof. emeritus, Harvard*
 Harlan J. Smith, *dir., McDonald Observ., Univ. of Texas, Austin*
 František Šorm, *professor, Inst. of Organic Chem., Prague, Czech.*

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G. Ledyard Stebbins, *prof. emeritus, Univ. of California*
C. Bruce Stephenson, *prof. of astronomy, Case Western Reserve*
Walter H. Stockmayer, *prof. of chemistry, Dartmouth*
Marshall H. Stone, *professor, University of Massachusetts*
N. Wyman Storer, *professor emeritus of astronomy, U. of Kansas*
Hans E. Suess, *prof. of geochemistry, Univ. of Cal., San Diego*
T. L. Swihart, *prof. of astronomy, Univ. of Arizona*
Pol Swings, *Institute d'Astrophysique, Esneux, Belgium*
J. Szentágothai, *Semmelweis Univ. Med. School, Budapest*
Joseph H. Taylor, Jr., *assoc. prof. of astronomy, Univ. of Mass.*
Frederick E. Terman, *vice-pres. and provost emeritus, Stanford*
Yervant Terzian, *assoc. prof. of space science, Cornell*
Patrick Thaddeus, *Inst. for Space Studies, New York, N. Y.*
Kip S. Thorne, *prof. of theor. physics, Cal. Inst. of Technology*

Alar Toomre, *prof. of applied mathematics, MIT*
Merle A. Tuve, *Carnegie Institution of Washington*
S. Vasilevskis, *emer. prof. of astronomy, Univ. of Cal., Santa Cruz.*
Maurice B. Visscher, *emer. prof. of physiology, U. of Minn.*
Joan Vorpahl, *Aerospace Corp., Los Angeles*
Campbell M. Wade, *Natl. Radio Astronomy Observatory*
N. E. Wagman, *emer. dir., Allegheny Observatory, U. of Pittsb.*
George Wallerstein, *prof. of astronomy, Univ. of Washington*
Fred L. Whipple, *Phillips astronomer, Harvard*
Hassler Whitney, *professor, Inst. for Advanced Study, Princeton*
Adolf N. Witt, *prof. of astronomy, Univ. of Toledo*
Frank Bradshaw Wood, *prof. of astronomy, University of Florida*
Charles E. Worley, *astronomer, U.S. Naval Observatory*
Chi Yuan, *assoc. prof. of physics, CCNY*

The Strange Case of Astrology

PAUL FEYERABEND

To drive the point home I shall briefly discuss the "Statement of 186 Leading Scientists" against astrology which appeared in the September/October issue 1975 of the *Humanist*. This statement consists of four parts. First, there is the statement proper which takes about one page. Next come 186 signatures by astronomers, physicists, mathematicians, philosophers and individuals with unspecified professions, eighteen Nobel Prize Winners among them. Then we have two articles explaining the case against astrology in detail.

Now what surprises the reader whose image of science has been formed by the customary eulogies which emphasize rationality, objectivity, impartiality and so on is the religious tone of the document, the illiteracy of the "arguments" and the authoritarian manner in which the arguments are being presented. The learned gentlemen have strong convictions, they use their authority to spread these convictions (why 186 signatures if one has arguments?), they know a few phrases which sound like arguments, but they certainly do not know what they are talking about.¹

Take the first sentence of the "Statement." It reads: "Scientists in a variety of fields have become concerned about the increased acceptance of astrology in many parts of the world."

In 1484 the Roman Catholic Church published the *Malleus Maleficarum*, the outstanding textbook on witchcraft. The *Malleus* is a very interesting book. It has four parts: phenomena, aetiology, legal aspects, theological aspects of witchcraft. The description of phenomena is sufficiently detailed to enable us to identify the mental disturbances that accompanied some cases. The aetiology is pluralistic, there is not just the official explanation, there are other explanations as well, purely materialistic explanations included. Of

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course, in the end only one of the offered explanations is accepted, but the alternatives are discussed and so one can judge the arguments that lead to their elimination. This feature makes the *Malleus* superior to almost every physics, biology, chemistry textbook of today. Even the theology is pluralistic, heretical views are not passed over in silence, nor are they ridiculed; they are described, examined, and removed by argument. The authors know the subject, they know their opponents, they give a correct account of the positions of their opponents, they argue against these positions and they use the best knowledge available at the time in their arguments.

The book has an introduction, a bull by Pope Innocent VIII, issued in 1484. The bull reads: "It has indeed come to our ears, not without afflicting us with bitter sorrow, that in . . ."—and now comes a long list of countries and counties—"many persons of both sexes, unmindful of their own salvation have strayed from the Catholic Faith and have abandoned themselves to devils . . ." and so on. The words are almost the same as the words in the beginning of the "Statement," and so are the sentiments expressed. Both the Pope and the "186 leading scientists" deplore the increasing popularity of what they think are disreputable views. But what a difference in literacy and scholarship!

Comparing the *Malleus* with accounts of contemporary knowledge the reader can easily verify that the Pope and his learned authors knew what they were talking about. This cannot be said of our scientists. They neither know the subject they attack, astrology, nor those parts of their own science that undermine their attack.

Thus Professor Bok, in the first article that is attached to the statement writes as follows: "All I can do is state clearly and unequivocally that modern concepts of astronomy and space physics give no support—better said, negative support—to the tenets of astrology" i.e. to the assumption that celestial events such as the positions of the planets, of the moon, of the sun influence human affairs. Now, "modern concepts of astronomy and space physics" include large planetary plasmas and a solar atmosphere that extends far beyond the earth into space. The plasmas interact with the sun and with each other. The interaction leads to a dependence of solar activity on the relative positions of the planets. Watching the planets one can predict certain features of solar activity with great precision. Solar activity influences the quality of short wave radio signals hence fluctuations in this quality can be predicted from the position of the planets as well.²

Solar activity has a profound influence on life. This was known for a long time. What was not known was how delicate this influence really is. Variations in the electric potential of trees depend not only on the gross activity of the sun but on *individual flares* and therefore again on the positions of the planets.³ Piccardi, in a series of investigations that covered more than thirty years found variations in the rate of standardized chemical reactions

that could not be explained by laboratory or meteorological conditions. He and other workers in the field are inclined to believe "that the phenomena observed are primarily related to changes of the structure of water used in the experiments."⁴ The chemical bond in water is about one tenth of the strength of average chemical bonds so that water is "sensitive to extremely delicate influences and is capable of adapting itself to the most varying circumstances to a degree attained by no other liquid."⁵ It is quite possible that solar flares have to be included among these "varying circumstances"⁶ which would again lead to a dependence on planetary positions. Considering the role which water and organic colloids⁷ play in life we may conjecture that "it is by means of water and the aqueous system that the external forces are able to react on living organisms."⁸

Just how sensitive organisms are has been shown in a series of papers by F. R. Brown. Oysters open and close their shells in accordance with the tides. They continue their activity when brought inland, in a dark container. Eventually they adapt their rhythm to the new location which means that they sense the very weak tides in an inland laboratory tank.⁹ Brown also studied the metabolism of tubers and found a lunar period though the potatoes were kept at constant temperature, pressure, humidity, illumination: man's ability to keep conditions constant is smaller than the ability of a potato to pick up lunar rhythms¹⁰ and Professor Bok's assertion that "the walls of the delivery room shield us effectively from many known radiations" turns out to be just another case of a firm conviction based on ignorance.

The "Statement" makes much of the fact that "astrology was part and parcel of (the) magical world view" and the second article that is attached to it offers a "final disproof" by showing that "astrology arose from magic." Where did the learned gentlemen get *this* information? As far as one can see there is not a single anthropologist among them and I am rather doubtful whether anyone is familiar with the more recent results of this discipline. What they do know are some *older* views from what one might call the "Ptolemaic" period of anthropology when post-17th century Western man was supposed to be the sole possessor of sound knowledge, when field studies, archaeology and a more detailed examination of myth had not yet led to the discovery of the surprising knowledge possessed by ancient man as well as by modern "Primitives" and when it was assumed that history consisted in a simple progression from more primitive to less primitive views. We see: the judgement of the "186 leading scientists" rests on an antediluvian anthropology, on ignorance of more recent results in their own fields (astronomy, biology, and the connection between the two) as well as on a failure to perceive the implications of results they do know. It shows the extent to which scientists are prepared to assert their authority even in areas in which they have no knowledge whatsoever.

There are many minor mistakes. "Astrology," it is said "was dealt a serious death blow" when Copernicus replaced the Ptolemaic system. Note the wonderful language: does the learned writer believe in the existence of "death blows" that are not "serious"? And as regards the content we can only say that the very opposite was true. Kepler, one of the foremost Copernicans used the new discoveries to improve astrology, he found new evidence for it, and he defended it against opponents.¹¹ There is a criticism of the dictum that the stars incline, but do not compel. The criticism overlooks that modern hereditary theory (for example) works with inclinations throughout. Some specific assertions that are part of astrology are criticized by quoting evidence that contradicts them; but every moderately interesting theory is always in conflict with numerous experimental results. Here astrology is similar to highly respected scientific research programmes. There is a longish quotation from a statement by psychologists. It says: "Psychologists find no evidence that astrology is of any value whatsoever as an indicator of past, present, or future trends of one's personal life. . . ." Considering that astronomers and biologists have not found evidence *that is already published, and by researchers in their own fields*, this can hardly count as an argument. "By offering the public the horoscope as a substitute for honest and sustained thinking, astrologers have been guilty of playing upon the human tendency to take easy rather than difficult paths"—but what about psychoanalysis, what about the reliance upon psychological tests which long ago have become a substitute for "honest and sustained thinking" in the evaluation of people of all ages?¹² And as regards the magical origin of astrology one need only remark that science once was very closely connected with magic and must be rejected if astrology must be rejected on these grounds.

The remarks should not be interpreted as an attempt to defend astrology as *it is practiced now* by the great majority of astrologists. Modern astrology is in many respects similar to early mediaeval astronomy: it inherited interesting and profound ideas, but it distorted them, and replaced them by caricatures more adapted to the limited understanding of its practitioners.¹³ The caricatures are not used for research; there is no attempt to proceed into new domains and to enlarge our knowledge of extra-terrestrial influences; they simply serve as a reservoir of naive rules and phrases suited to impress the ignorant. Yet this is not the objection that is raised by our scientists. They do not criticize the air of stagnation that has been permitted to obscure the basic assumptions of astrology, they criticize these basic assumptions themselves and in the process turn their own subjects into caricatures. It is interesting to see how closely both parties approach each other in ignorance, conceit and the wish for easy power over minds.¹⁴

Notes

1. This is quite literally true. When a representative of the BBC wanted to interview some of the Nobel Prize Winners they declined with the remark that they had never studied astrology and had no idea of its details. Which did not prevent them from cursing it in public. In the case of Velikowski the situation was exactly the same. Many of the scientists who tried to prevent the publication of Velikowski's first book or who wrote against it once it had been published never read a page of it but relied on gossip or on newspaper accounts. This is a matter of record. Cf. de Grazia, *The Velikowski Affair*, New York 1966, as well as the essays in *Velikovsky Reconsidered*, New York 1976. As usual the greatest assurance goes hand in hand with the greatest ignorance.

2. J. H. Nelson, *RCA Review*, Vol. 12 (1951), pp. 26ff.; *Electrical Engineering*, Vol. 71 (1952), pp. 421ff. Many of the scientific studies that are relevant for our case are described and indexed in Lyall Watson, *Supernature*, London 1973. Most of these studies have been neglected (without criticism) by orthodox scientific opinion.

3. This was found by H. S. Burr. Reference in Watson, *op. cit.*

4. W. W. Tromp, "Possible Effects of Extra-Terrestrial Stimuli on Colloidal Systems and Living Organisms," *Proc. 5th Intern. Biometeorolog. Congress, Nordwijk 1972*, Tromp and Bouma (eds.), p. 243. The article contains a survey of the work initiated by Piccardi who started long range studies on the causes of certain non-reproducible physico-chemical processes in water. Some of the causes were related to solar eruptions, others to lunar parameters. Reference to such extra-terrestrial stimuli is rare among environmental scientists and the corresponding problems are "often forgotten or neglected" (p. 239). However, "despite a certain resistance experienced among orthodox scientists, a clear breakthrough can be observed in recent years amongst the younger research workers" (p. 245). There are special research centres such as the *Biometeorological Research Center* in Leiden and the *Stanford Research Center* in Menlo Park, California which study what once was called the influence of the heavens upon the earth and have found correlations between organic and unorganic processes and lunar, solar, planetary parameters. Tromp's article contains a survey and a large bibliography. The *Biometeorological Research Center* issues periodic lists of publications (monographs, reports, publications in scientific journals). Part of the work done at the *Stanford Research Institute* and related institutions is reported in (ed.) John Mitchell *Psychic Exploration, A Challenge for Science*, New York 1974.

5. G. Piccardi, *The Chemical Basis of Medical Climatology*, Springfield, Illinois 1962.

6. Cf. G. R. M. Verfaillie, *Intern. Journ. Biometeorol.*, Vol. 13 (1969), pp. 113ff.

7. Tromp, *loc. cit.*

8. Piccardi, *loc. cit.*

9. *Am. Journ. Physiol.*, Vol. 178 (1954), pp. 510ff.

10. *Biol. Bull.* Vol. 112 (1957), p. 285. The effect could also be due to synchronicity—cf. C. G. Jung, "Synchronicity: An Acausal Connecting Principle," in *The Collected Works of C. G. Jung*, Vol. 8, London 1960, pp. 419ff.

11. Cf. Norbert Herz, *Keplers Astrologie*, Vienna 1895, as well as the relevant passages from Kepler's collected works. Kepler objects to tropical astrology, retains sidereal astrology, but only for mass phenomena such as wars, plagues etc.

12. The objection from free will is not new; it was raised by the Church fathers. So was the twin objection.

13. On astrology see Paul Feyereabend, *Against Method*, p. 100n.

14. Cf. *Against Method* p. 208n.