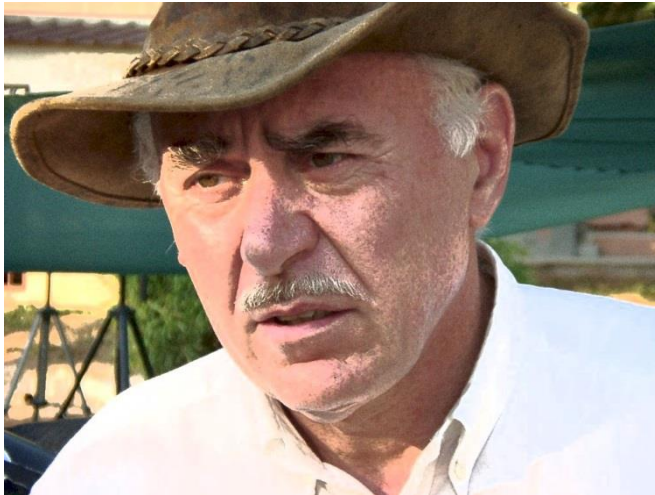


Measurements of the solar edge and of the diameter of the Sun using total eclipses

Serge Koutchmy

Biography



CV of Serge Koutchmy (2014)
Dr d'Etat es science (1972).
Position now: Directeur de recherches emeritus at Institut d'Astrophysique de Paris, UMR 7095, CNRS (Section 14) & UPMC. Address: Institut d'astrophysique de Paris 98 Bis Bd Arago; F- 75014 Paris. Tel. 33144328056; email: koutchmy@iap.fr
1 Main positions
1967 Assistant, Paris

Observatory

1968 Research fellowship, Centre National de la Recherche Scientifique

1978 Permanent position in CNRS (tenure/charge de recherche)

1992: Directeur de Recherche (DR) in CNRS(France)

2006- now : Directeur de recherche émérite CNRS

Fellowship/Awards: AFGL/Sacramento Peak Observatory-NM(USA) 1976-78

Senior Research Associate at NSO/SacPeak Observatory 1986-88; NAOJ-Mitaka in 1995.

2. Main contributions to research:

* Successfully observed 20 Total Solar Eclipses at ground, over ground and oceans, using aircrafts (including the Supersonic Concorde 001) and in space; models of F-corona and of coronal structures, including the finest structure; spectra; polarization; tangential magnetic discontinuities; 3D streamers and sheets; active regions linear threads; emission line profiles, velocity/ temperature structure, coronal mass eruptions; prominences.

* Developed several solar IR experiments at Pic du Midi Observatory; 1st absolute measurements of solar intensities at 18 to 24 microns- 1968; 1st sunspot photometry at 3.75 microns;

* Developed IR photometry at Sacramento-Peak Obs. VTT (1977); umbral dots; faculae; network magnetic elements;

* Developed a prominence magnetograph on the largest existing coronagraph- 53 cm aperture- of the USSR Kislovodsk High Altitude Observatory (1980-82); V- Stokes magnetic field measurements and Doppler- Fizeau effects in prominences;

- * P.I. of the space borne experiment 'Night Sky Imaging' and co-I of PIRAMIG for the flight of the Saliout 7 (1982) ST of the 1st French Spationaute; 1st observation of the inner zodiacal light; Earth atmospheric effects including twilight effects and mirages.
- * Developed the 1st mirror coronagraph at NSO/SP (1987); 1st optical coronal emission line image ever made with a mirror coronagraph;
- * Co-I of the C2/Lasco coronagraph of SoHO (1988); design of the SWATH space borne mirror coronagraph (NASA);
- * P.I. of the CFHT-91 eclipse coronal experiment on Mauna-Kea to point the largest optical telescope ever used toward the Sun; best resolution ever achieved of an image of the W-L corona; movie and dynamics of a 2 arcsec diameter coronal plasmoid;
- * Performed 1st observations of SXR polar jetlets using the SXT of Yohkoh-96 at ISAS-Japan; more observations with the XRT of Hinode, TRACE, AIA of SDO and IRIS mission.
- * Performed 1st measurement of the solar prolateness at NSO/Sacramento- Peak Observatory (1997-98) using VTT (DST) images and spectra.
- * co-I Solar Probe exp-t of NASA (2000), Lyot- SMESE and ASPIICS proposal of CNES & ESA (2004-6).
- * P.I. of several cooperative projects (2000-2015) in astrophysics and solar energy, including facilities in Egypt, Iran and Angola.
- * 1st analysis of chromospheric spicule coherent components including waves using the SOT of Hinode (Japan). Spectra at eclipses (2010-14).
- * Main adviser (directeur de these) of more then 12 PhDs (1974- to now) and of more than 20 Master thesis. .

3. International Audience

Medal of the USSR Space Agency (1982) and the French Space Agency CNES (1983); Medal Janssen, French Academy of Sciences (1993); Price Janssen of the French Astronomical Society (1998); elected member of the Marquis "Who's Who in the Word", 20th edition (2003) for "outstanding achievements in his field".

4. Most significant publications

More than 450 scientific papers selected from 1967 to now in NASA Astrophysics Data System, half in refereed journals; more general public papers and many eclipse images published.

Books: "Total Eclipses", 1998, Masson Ed. 300p (in French); re-edited and translated in English at Springer-Praxis Series in Astron. (1999), etc. Participation as invited contributor and/or chairman in the writing of 8 books, starting with the Illustrated Solar Glossary- Riedel Pub. (1978), part "solar corona".

Five selected papers over 45 years: "Morphological Particularities of the Solar Corona" (1969) in *Astrophys. Letters*, 3, 215-220; "Study of the June 30, 1973 trans-polar coronal hole" (1975) in *Solar Phys.* 51, 399-410 ; "Short Periods coronal oscillations: observations and interpretation"(1983) in *Astron. Astrophys.* 120, 185-191 ; "Space-borne Coronagraphy" (1988) in *Space Science Review*, 47, 95-143 ; "Coronal

Streamers" (2000), in "The Encycl. of Astron. Astrophys." 5 vol., Institute of Physics Pub., England.