

September 13, 2012

Index of publications by subjects
and
in collected books

Index: Astrobiology

1. Chela-Flores, J. (1991). Comments on a Novel Approach to the Role of Chirality in the Origin of Life. *Chirality* **3**, 389-392.
2. Chela-Flores, J. (1994a). Are viroids molecular fossils of the RNA world?. *J. Theor. Biol.* **166**, 163-166.
3. Chela-Flores, J. (1994b). The origin of chirality in protein amino acids. *Chirality* **6**, 165-168.
4. Chela-Flores, J. (1995). Is the Salam phase transition relevant to the causal origin of homochirality ?. *Proc. Pakistan Acad. Sci.* **32**, 1-12 (By invitation of the Editor to celebrate Professor Abdus Salam's 70th Birthday).
5. Chela-Flores, J. (1996). Preservation of relics from the RNA world through natural selection, symbiosis and horizontal gene transfer. *Acta Biotheoretica* **44**, 169-177.
6. Chela-Flores, J. (1998). A Search for Extraterrestrial Eukaryotes: Physical and Biochemical Aspects of Exobiology. *Origins Life Evol. Biosphere* **28**, 583-596.
7. Smith, A., Crawford, I. A., Gowen, R. A., Ball, A. J., Barber, S. J., Church, P., Coates, A. J., Gao, Y., Griffiths, A. D., Hagermann, A., Phipps, A., Pike, W.T., Scott, R., Sheridan, S., Sweeting, M., Talboys, D., Tong, V., Wells, N., Biele, J., Chela-Flores, J., Dabrowski, B., Flannagan, J., Grande, M., Grygorczuk, J., Kargl, G., Khavroshkin, O. B., Klingelhofer, G., Knapmeyer, M., Marczewski, W., McKenna-Lawlor, S., Richter, L., Rothery, D.A., Seweryn, K., Ulamec, S., Wawrzaszek, R., Wieczorek, M., Wright, I.P. (2008). LunarEX – A proposal to Cosmic Vision, *Experimental Astronomy* **10**.1007/s10686-008-9109-6 (August 21, 2008).
8. Chela-Flores, J. (2010). From the Moon to the Moons: Encedalus and Europa. The Search for Life and Reliable Biomarkers. *Journal of Cosmology* **5**, 971-981.
9. Smith, A.; I A Crawford; Robert Anthony Gowen; R Ambrosi; M Anand; B Banerdt; N Bannister; N Bowles; C Braithwaite; P Brown; J Chela-Flores; T Cholinser; P Church; A J Coates; T Colaprete; G Collins; G Collinson; T Cook; R Elphic; G Fraser; Y Gao; E Gibson; T Glotch; M Grande; A Griffiths; J Grygorczuk; M Gudipati; A Hagermann; J Heldmann; L L Hood; A P Jones; K Joy; O B Khavroshkin; G Klingelhofer; M Knapmeyer; G Kramer; D Lawrence; W Marczewski; S McKenna-Lawlor; K Miljkovic; S Narendranath; E Palomba; A Phipps; W T Pike; D Pullan; J Rask; D T Richard; K Seweryn; S Sheridan; M Sims; M Sweeting; T Swindle; D Talboys; L Taylor; N Teanby; V Tong; S Ulamec; R Wawrzaszek; M Wieczorek; L Wilson; I Wright (2012). Lunar Net – A proposal in response to an ESA M3 call in 2010 for a medium sized mission. *Experimental Astronomy* **33**, Issue 2, 587-644.
10. Chela-Flores, J. (2012a). A case for landing on the moon's farside to test nitrogen abundances. *International Journal of Astrobiology* **11**, 61-69, doi:10.1017/S1473550411000334 © Cambridge University Press 2011.
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14. Chela-Flores, J. (2008). Fitness of the cosmos for the origin and evolution of life: from biochemical fine-tuning to the Anthropic Principle. In: *Fitness of the cosmos for life: Biochemistry and fine-tuning*. John D. Barrow, Simon Conway Morris, Stephen J. Freeland and Charles L. Harper (eds.) Cambridge University Press, pp.151-166. First paperback edition (2012). ISBN 978-1-107-40655-1 Paperback.
15. Chela-Flores, J. and Seckbach, J. (2011). Astrobiology: From Extremophiles in the Solar System to Extraterrestrial Civilizations. In: *Astronomy and Civilization in the New Enlightenment. Passions of the Skies*. Anna-Teresa Tymieniecka (ed.) *Analecta Husserliana* **107**, 237-246.
16. Chela-Flores, J. (2011). Epilogo: El futuro de la astrobiología como ciencia. In: *Astrobiología un universo de vida*. Jorge Bueno and A. Moreno (eds.). Kodigo Artes Graficas, Bogota, Colombia., pp. 201-212.

A selection of conference summaries and unpublished proceedings contributions.

Index: Astrobiology and Philosophy

1. Aretxaga, R. Chela-Flores, J. y Mayz-Vallenilla, E. (2003). Astrobiología y Filosofía, *Letras de Deusto* (Universidad de Deusto, Bilbao, Spain) nº 98, Vol. **33**, enero-marzo, pp. 187-224.
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3. Chela-Flores, J. (2008). La posibilidad de la existencia de vida extraterrestre inteligente, su búsqueda científica e interés filosófico, in: *Astrobiología y Filosofía (III)*, *Letras de Deusto*, Spain, Vol. **38**, n118. Enero-Marzo, pp. 38-47.
4. Chela-Flores, J. (2012). SETI: la convergencia como un nuevo paradigma, In: Aretxaga-Burgos, R. et al., *Astrobiología y Filosofía (IV)*, *Letras de Deusto* (Universidad de Deusto, Bilbao), Vol. **42**, nº 134, enero-marzo, pp. 29-38.

Index: Biology

1. Chela-Flores, J. (1985). Evolution as a Collective Phenomenon. *J. Theor. Biol.* **117**, 107-118.
2. Chela-Flores, J. (1987a). Towards a Collective Biology of the Gene. *J. Theor. Biol.* **126**, 127-136.
3. Chela-Flores, J. (1987b). Collective Biology of Neoplastic Disease in Dicotyledonous Plants. *Acta Biotheoretica* (Leiden) **36**, 241-247.
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5. Chela-Flores, J., Liquori, A. M., and Florio, A. (1988). A Kinetic Thermodynamic Approach to Genetic Expression of Heat-Shock Proteins. *J. Theor. Biol.* **134**, 319-325.
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7. Chela-Flores, J. (1988). Evolutionary Implications of Genetic Code Deviations. *Acta Biotheoretica* (Leiden) **37**, 267-279.
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9. Chela-Flores, J. and Espejo Acuña, C. (1990). On the Possible Effects of Homeostatic Shifts in Human Embryonic Development. *Acta Biotheoretica* (Leiden) **38**, 135-142.
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11. Chela-Flores, J. (1992a). Towards the Molecular Bases of Polymerase Dynamics. *Journal of Theoretical Biology*, **154**, 519-539 and Erratum: *J. Theor. Biol.* **157** (1992) 269.
12. Chela-Flores, J. (1992b). Influence of Chromatin Molecular Changes on RNA Synthesis during Embryonic Development. *Acta Biotheoretica* **40**, 41-49.
13. Chela-Flores, J. (1994). Towards the theoretical bases of the folding of the 100-Å nucleosome filament. *J. Theor. Biol.* **168**, 65-73.
14. Chela-Flores, J. (1998). First steps in eukaryogenesis: Origin and evolution of chromosome structure. *Origins Life Evol. Biosphere* **28**, 215-225.
15. Chela-Flores, J. (2007). Testing the universality of biology. *International Journal of Astrobiology*, **6** (3): 241-248. (Cambridge University Press).
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17. Chela-Flores, J. (1989). Fenomenos colectivos en genetica molecular. In: *Manipulacion Genetica con Protoplastos* (Andean Program of Biotechnology). L. Villegas (ed.) Caracas, Editorial Signo Contemporaneo. pp. 163-180.
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19. Tewari, V. C. and Chela Flores, J. (2009). Possible Role of Sulfur on the Early Diversification of Life on Earth: Astrobiological Implications. K.L. Srivastava (ed.) *Economic Mineralisation Scientific Publishers*, Jodhpur, India, pp. 53-56.
20. Chela-Flores, J. (2012). Habitability from systems biology: Are moons relevant? In: *Habitability on other planets and satellites-The quest for extraterrestrial life*. J.-P. P. de Vera and J. Seckbach (eds.) Series: Cellular Origin, Life in Extreme Habitats and Astrobiology, Springer, Dordrecht. (Under review.)

Contributions to Festschrifts

21. Chela-Flores, J. (1988). Gene expression as a collective phenomenon. In: *Leite Lopes Festschrift—A Pioneer Physicist in the Third World*. Eds. N. Fleury, J.A. Martin Simoes, and A. Troper. Singapore, World Scientific Publishers. pp. 252-265.
22. Chela-Flores, J. (1990). Evolution and epigenesis in a qualitative description of molecular genetics. In: *J. J. Giambiagi Festschrift*. H. Falomir, R. E. Gamboa Saravi, P. Leal Ferreira and F. A. Schaposnik (eds.). Singapore, World Scientific Publishers. pp. 107-124.

Summaries of conferences

Index: COLE Series 1999-2012

1. Chela-Flores, J. (1999). Eukaryogenesis: The search for an evolutionary transition towards intelligence in an extreme environmental habitat of the Outer Solar System. In: *Enigmatic Microorganisms and Life in Extreme Environments*. J. Seckbach (ed.) Book Series: Cellular Origin and Life in Extreme Habitats. Kluwer Academic Publishers, Dordrecht, The Netherlands, pp. 63-71.
2. Seckbach, J., Westall, F. and Chela-Flores, J. (2000a). Introduction to Astrobiology. In: *Journey to Diverse Microbial Worlds: Adaptation to Exotic Environments*, J. Seckbach (ed.) Book Series: Cellular Origin and Life in Extreme Habitats. Kluwer Academic Publishers, Dordrecht, The Netherlands, pp. 367-375.
3. Chela-Flores, J. (2000b). Terrestrial Microbes as Candidates for Survival on Mars and Europa. In: *Journey to Diverse Microbial Worlds: Adaptation to Exotic Environments*. J. Seckbach (ed.) Book Series: Cellular Origin and Life in Extreme Habitats. Kluwer Academic Publishers, Dordrecht, The Netherlands, pp. 387-398.
4. Chela-Flores, J. (2004). Astrobiology's Last Frontiers: Distribution and Destiny of Life in the Universe. In: *Origins: Genesis, Evolution and the Biodiversity of Life*, J. Seckbach (ed.), Book Series: Cellular Origin, Life in Extreme Habitats and Astrobiology, Springer, Dordrecht, The Netherlands, pp. 667-679.
5. Chela-Flores, J. (2006a). Destinies of Life and the Universe: the final frontiers of astrobiology and cosmology. In: *"Life as we know it"*. J. Seckbach (ed.), Book Series: Cellular Origins, Life in Extreme Habitats and Astrobiology, Springer, Dordrecht, The Netherlands, pp. 505-517.
6. Seckbach, J. Raulin, F., Oren, A., Kolb, V. and Chela-Flores, J. (2006b). What do we call life? A Brief Outlook on Life. In: *"Life as we know it"*. J. Seckbach (ed.), Book Series: Cellular Origins, Life in Extreme Habitats and Astrobiology, Springer, Dordrecht, The Netherlands, pp. 739-743,
7. Chela-Flores, J. Jerse, G., Messerotti, M. And Tuniz, C. (2009). Astronomical and astrobiological imprints on the fossil records. A review. In: *From Fossils to Astrobiology*, J. Seckbach (ed.), Book Series: Cellular Origins, Life in Extreme Habitats and Astrobiology, Springer, Dordrecht, The Netherlands, pp. 389-408.
8. Seckbach, J. Chela-Flores, J., Oren, A. and Raulin F. (2009). Summary, final comments and conclusions. In: *From Fossils to Astrobiology*, J. Seckbach (ed.), Book Series: Cellular Origins, Life in Extreme Habitats and Astrobiology, Springer, Dordrecht, The Netherlands, pp. 515-520.
9. Dudeja, S., Bhattacharjee, A. B. and Chela-Flores, J. (2010). Microbial mats in Antarctica as models for the search of life on the Jovian moon Europa. In: *Microbial Mats*, J. Seckbach and A. Oren (eds.) Book Series: Cellular Origin, Life in Extreme Habitats and Astrobiology, Springer, Dordrecht, The Netherlands pp. 543-561.
10. Seckbach, J., Ericksson, P. G., Walsh, M. M., Oren, A. and Chela-Flores, J. (2010). Microbial Mats: Summary and Conclusions. In: *Microbial Mats*, J. Seckbach and A. Oren (eds.) Book Series: Cellular Origin, Life in Extreme Habitats and Astrobiology, Springer, Dordrecht, The Netherlands, pp. 585-590.
11. Chela-Flores, J., Montenegro, M.E., Pugliese, N. Tewari, V.C. and Tuniz, C. (2010). Evolution of plant-animal interactions. In: *All flesh is grass: Plant-Animal Interactions, a love-hate affair*. J. Seckbach and Z. Dubinsky and (eds.). Book Series: Cellular Origin and Life in Extreme Habitats and Astrobiology, Springer, Dordrecht, The Netherlands, pp. 1-34.
12. Tewari, V. C. and Chela-Flores, J. (2011). Possible role of sulfur on the early diversification of life on Earth: Astrobiological implications. In: *Stromatolites: Interaction of Microbes with Sediments*. J. Seckbach and V. C. Tewari (eds.) Book Series: Cellular Origin, Life in Extreme Habitats and Astrobiology, Springer, The Netherlands, pp. 723-736.
13. Seckbach, J. and Chela-Flores, J. (2012). Habitable environments by Extremophiles on Earth, the Solar System and Elsewhere. In: *Genesis - In the Beginning Precursors of Life, Chemical Models and Early Biological Evolution*. J. Seckbach (ed.) Book Series: Cellular Origin and Life in Extreme Habitats and Astrobiology, Springer, Dordrecht, The Netherlands, pp. 859-870.
14. Aretxaga-Burgos, R. and Chela-Flores, J. (2012). Cultural Implications of the Search and Eventual Discovery of a Second Genesis. In: *Genesis - In the Beginning Precursors of Life, Chemical Models and Early Biological Evolution*. J. Seckbach (ed.) Book Series: Cellular Origin and Life in Extreme Habitats and Astrobiology, Springer, Dordrecht, The Netherlands, pp. 873-890.

Index: Europa

1. Chela-Flores, J. (2003). Testing Evolutionary Convergence on Europa. *International Journal of Astrobiology* **2**, (4), 307-312 (Cambridge University Press).
2. Chela-Flores, J. (2006). The sulphur dilemma: Are there biosignatures on Europa's icy and patchy surface? *International Journal of Astrobiology*, **5**, pp. 17-22.
3. Chela-Flores, J. and Kumar, N. (2008). Returning to Europa: Can traces of surficial life be detected? *International Journal of Astrobiology*, 7(3) 263-269 (Cambridge University Press).
4. Blanc, M. et al and LAPLACE Team Members (2009). LAPLACE: a mission to Europa and the Jupiter System for ESA's Cosmic Vision Programme, *Experimental Astronomy*, **23**, (3), 849-892. List of LAPLACE Team Members.
5. Chela-Flores, J. (2010). Instrumentation for the search of habitable ecosystems in the future exploration of Europa and Ganymede. *International Journal of Astrobiology* **9**, (2), pp. 101-108.
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7. Chela-Flores, J. (1996). Habitability of Europa: possible degree of evolution of European biota. *Europa Ocean Conference at San Juan Capistrano Research Institute*. San Juan Capistrano, California, USA. 12-14 November, 1996, pp. 21-21a.
8. Chela-Flores, J. (1997a). Testing for evolutionary trends of European biota. In: *Instruments, Methods and Missions for Investigation of Extraterrestrial Microorganisms* (R.B.Hoover, ed.), Proc. SPIE, **3111**, pp. 490-500, pp. 262-271.
9. Chela-Flores, J. (1997b). A Search for Extraterrestrial Eukaryotes: Biological and Planetary Science Aspects. In: *Astronomical and Biochemical Origins and the Search for Life in the Universe*. Eds. C.B. Cosmovici, S. Bowyer and D. Werthimer. Editrice Compositore: Bologna. pp. 525-532.
10. Joan Horvath, Frank Carsey, James Cutts, Jack Jones, Elizabeth Johnson, Bridget Landry, Lonnie Lane, Gindi Lynch, Julian Chela-Flores, Tzyy-Wen Jeng and Albert Bradley (1997). Searching for ice and ocean biogenic activity on Europa and Earth. In: *Instruments, Methods and Missions for Investigation of Extraterrestrial Microorganisms*, The International Society for Optical Engineering, Bellingham, Washington USA. (R.B.Hoover, ed.), Proc. SPIE, **3111**, pp. 490-500.
11. Chela-Flores, J. (1998). Europa: A potential source of parallel evolution for microorganisms. In: *Instruments, Methods and Missions for Astrobiology*. The International Society for Optical Engineering, Bellingham, Washington USA. (R. B.Hoover, ed.), Proc. SPIE, **3441**, pp. 55-66.
12. Chela-Flores, J. (2000). Testing the Drake Equation in the solar system. In *A New Era in Astronomy*, Lemarchand G. A. and Meech K. (eds.), ASP Conference Series, San Francisco, **213**, 402-410.

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14. Chela-Flores, J. (2001b). Search for microorganisms on Europa and Mars in relation with the evolution of intelligent behavior on other worlds. *ESA SP* **496**, pp. 219-222.
15. Chela-Flores, J. (2002). Can evolutionary convergence be tested on Europa? *European Space Agency Special Report ESA SP* **518**, 337-340.
16. Chela-Flores, J. (2007). Orígenes del Universo, la vida y la inteligencia. In: *Ab initio: Origenes del universo, la vida y la inteligencia*. Nelson Falcón and Yaquelin Loyo (eds.) Consejo de Desarrollo Científico y Tecnológico de la Universidad de Carabobo, Valencia Venezuela. ISBN 978-980-12-2752-6, pp. 53-69.
17. Chela-Flores, J. and Seckbach, J. (2011). The Dry Valley Lakes, Antarctica: from sulfur stains on Earth to sulfur stains in the Jovian system. *Instruments, Methods, and Missions for Astrobiology XIV*. Edited by Hoover, Richard B.; Davies, Paul C. W.; Levin, Gilbert V.; Rozanov, Alexei Y. Proceedings of the SPIE, **8152**, pp. 81520R-81520R-8. DOI: 10.1117/12.898763.

Response to an ESA the Announcement of Opportunity

Robert Gowen, Alan Smith, Richard Ambrosi, Olga Prieto Ballesteros, Simeon Barber, Dave Barnes, Chris Braithwaite, John Bridges, Patrick Brown, Phillip Church, Glyn Collinson, Andrew Coates, Gareth Collins, Ian Crawford, Veronica Dehant, Michele Dougherty, Julian Chela-Flores, Dominic Fortes, George Fraser, Yang Gao, Manuel Grande, Andrew Griffiths, Peter Grindrod, Leonid Gurvits, Axel Hagermann, Toby Hopf, Hauke Hussmann, Ralf Jaumann, Adrian Jones, Geraint Jones, Katherine Joy, Ozgur Karatekin, Günter Kargl, Antonella Macagnano, Anisha Mukherjee, Peter Muller, Ernesto Palomba, Tom Pike, Bill Proud, Derek Pullen, Francois Raulin, Lutz Richter, Simon Sheridan, Mark Sims, Frank Sohl, Joshua Snape, Jon Sykes, Vincent Tong, Tim Stevenson, Lionel Wilson, Ian Wright, John Zarnecki:

Declaration of Interest in science instrumentation in response to the Announcement of Opportunity for Europa Jupiter System Mission (EJSM/Laplace) Cosmic Vision Candidate: Surface Element Penetrators, May 2009

A selection of conference summaries and interviews

Index: Fundamental Interactions

1. Chela-Flores, J. (1968). Relation between CP violating parameters. *Nucl. Phys.* **B7**, 409- 412.
2. Chela-Flores, J. (1969). CP violation and the $\Delta S = \Delta Q$ selection rule. *Lett. Nuovo Cimento* **1**, 441-444.
3. Chela-Flores, J. and Colegrave, R.K. (1969a). CP violation and the ϕ_{00} angle. *Lett. Nuovo Cimento* **1**, 884-886.
4. Chela-Flores, J. and Colegrave, R.K. (1969b). The Princeton-Rutherford dilemma. *Lett. Nuovo Cimento* **2**, 131-134.
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6. Chela-Flores, J. (1970). Mandelstam Representation in Potential Scattering. *J. Math. Phys.* **11**, 2013-2015.
7. Aragone, C. and Chela-Flores, J. (1972). Properties of the f-g Theory. *Nuovo Cimento* **10A**, 818-832.
8. Chela-Flores, J. and Herrera, L. (1974). Theory of Gravity and Hadronic Physics. *Lett. Nuovo Cimento* **9**, 487-491.
9. Chela-Flores, J. (1974). Physical Quantities in a Classical Two-Tensor Theory of Gravitation. *Int. J. Theor. Phys.* **10**, 103-114.
10. Aragone, C. and Chela-Flores, J. (1975). Null Dynamics of General Relativity in the Ray Gauge. *Nuovo Cimento* **25B**, 225-241.
11. Chela-Flores, J. (1975). Remarks on Gauge Theories of Fundamental Forces. *Int. J. Theor. Phys.* **13**, 17-25.
12. Aragone, C., Chela-Flores, J., and Restuccia, A. (1979). Local Geometry of Superconformal Gravity. *Phys. Lett.* **82B**, 377-381.
13. Chela-Flores, J. and Silva-Galiza, P. (1980). Short-Range Potentials in the Theory of Strong Gravity. *Nuovo Cimento* **56B**, 302-312.
14. Aragone, C., Chela-Flores, J., and Restuccia, A. (1980). The Baker-Campbell-Housdorff Formula for the SU(2) Supergroup. *J. Math. Phys.* **21**, 1229-1233.
15. Chela-Flores, J. (1982). Tests for Complete Breakdown of Discrete Symmetry in D-D. *Nuovo Cimento* **68A**, 266-278.
16. Chela-Flores, J. and Varela, V. (1983b). Chela-Flores, J. and Varela, V. (1983a). Strong Gravity: An Approach to its Source. *Phys Rev.* **D27**, 1248-1253.
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18. Chela-Flores, J. (1984). Abrupt Onset of Scaling Violations. *Phys. Rev.* **D29**, 1339-1344.
19. Chela-Flores, J. (1985). Quark Distribution Distorsion in Heavy Nuclei. *Lett. Nuovo Cimento* **43**, 233-236.
20. A selection of conference summaries.

Index: Humanities

1. Chela-Flores, J. (2005). Fitness of the universe for a second genesis Is it Compatible with Science and Christianity? *Science and Christian Belief* **17** (2), 187-197.

Chapters in Books

1. Chela-Flores, J. (1997). Cosmological models and appearance of intelligent life on Earth: The phenomenon of the eukaryotic cell. In: "Reflections on the birth of the Universe: Science, Philosophy and Theology". Eds. Padre Eligio, G. Giorello, G. Rigamonti and E. Sindoni. Edizioni New Press: Como, 1997. pp. 337-373.
2. Chela-Flores, J. (1998). The Phenomenon of the Eukaryotic Cell. In: *Evolutionary and Molecular Biology: Scientific Perspectives on Divine Action*. R. J. Russell, W. R. Stoeger and F. J. Ayala, Editors. Vatican City State/Berkeley, California: Vatican Observatory and the Center for Theology and the Natural Sciences, pp. 79-99. <http://www.ictp.trieste.it/~chelaf/ss20.html>
3. Chela-Flores, J. (1999a). Search for the Ascent of Microbial Life towards Intelligence in the Outer Solar System. In: *Origin of intelligent life in the universe*. Eds. R. Colombo, G. Giorello and E. Sindoni. Edizioni New Press: Como. pp.143-157.
http://www.ictp.trieste.it/~chelaf/searching_for_ascent.html
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