CURRICULUM VITAE

John Middleditch
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Personal Details	
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Education	
1964-68	B. S. physics, honors, California Institute of Technology
1968-75	Ph. D. physics, University of California, Berkeley, 1976, Thesis advisors, Eugene Commins/Jerry Nelson
1977	Course in solid state physics, U. California, Berkeley,
1997	Audited ME-562 (graduate mechanics) UNM
2006	Topics in Modeling (Queue Theory) Simon Frasier U, BC, Canada
Positions	
1988.35 - present	Staff, LANL (C-3, CIC-19,3, CCS-3)
1980.75 - 1988.35	" " " (NIS-2)
1976.83-80.75	Physicist P4, Lawrence Berkeley Laboratory
1975.92-76.83	Visiting Professor at the Asiago Astrophysical Observatory of the University of Padua, Italy
Research Interests	Rapid time variablity in astronomical sources pulsars: binary, X-ray, radio/optical ms, noisars, Galactic center, Image reconstruction techniques Computational techniques
Professional Societies	American Astronomical Society
Experience with systems	Windows, LINUX, UNICOS, CTSS, LTSS, NOS
Experience with computers	QSC, FLASH, Lambda cluster, Theta cluster, PC's
FORTRAN Experience	since 1962, many large programs, FORTRAN77, FORTRAN90 Large (out of core) Fourier transform with 2 levels of memory (Cray-1, XMP, YMP, CDC 6400 6600 with 3 levels of memory (7600) Large (in core) Fourier transform (Cray M98)
Other Languages	CAL (lots), C, knowledge of C++ Spanish, Italian, some French
Other Experience	Multi-dimensional FFT's, Image processing/deconvolution Lots of data handling Interfacing Statistical Crack Mechanics to PRONTO & DYNA3D – a finite element Lagrangian solid materials code vectorized
Graphics Experience	wrote own graphics package, contour plotter Interfaced to CA-DISSPLA Interfaced to cgs & fonts
Future Development	Parallel Fourier/Fresnel search for drifting signals Fast, parallel search for trains of harmonics. FFT GUI?? On site full analysis platform? (Pending Keck time, etc.)

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08Aug06

Scientific Acomplishments

First mass and spin sense measurements of a neutron star
First inclination-independent measurement of an unresolved binary system (P$\sim$2500s – 4U1626-67) outside of the solar system and second spin sense measurement of a neutron star
Discovery of a 50 ms young optical pulsar in the LMC (0540-69)
SPARTAN-1 imaging analysis of Galactic Center
Simultaneous co-discovery of rapid QPO in the Galactic Bulge X-ray sources (in this case, Sco X-1)
Discovery of the first pulsar (3 ms) in a globular cluster (1821-24)
Discovery of the first pulsar in a globular cluster with a negative pdot
" a 2.14 ms optical psr in SN1987A which precesses and slows via GR
" the fastest young pulsar (62 Hz) in any supernova remnant (N157B)
First accurate glitch prediction for any pulsar (PSR J0537-6910)
First (decent) argument against SN Ia Cosmology and Dark Energy

Activities at LANL

2005-06 RAGE code test support & diagnostics
2005-07 CMPC for CCS-3
2004-05 W88 Certification Team
1998-07 ADC for CCS-3
1993-98 Large Data Sets Specialist
1993-94 Housecalls Program
1992-04 Modeling Support for AGEX Surety/HEVR Programs
1990-97 Coach/advisor for NM Technet Supercomputing Challenge
1988-99 FFT algorithm specialist, C-3, CIC-3
1988-97 Observational astronomer C-3
1984-88 Imaging specialist for SPARTAN 1
1982-88 Support astronomer, SPARTAN-1, URA, SSO-2
1980-88 Observational astronomer SSO-2

Selected Publications*

J. Middleditch, 2007 "The SN 1987A Link to Gamma-Ray Bursts" *preprint (astro-ph/0705.3846)*, to be published in the Proceedings of "SN 1987A: 20 Years After, Supernovae and Gamma-Ray Bursters, Aspen, CO, Feb. 19-23, 2007

J. Middleditch, 2006 "Predicting the Starquakes in PSR J0537-6910" *The Astrophysical Journal*, 652,1531-1546

J. Middleditch, 2004 "A White Dwarf Merger Paradigm for Supernovae and Gamma-Ray Bursts", *The Astrophysical Journal (Letters)*, **601**, L167-171

J. Middleditch, J. Kristian, W. Kunkel *et al.*, 2000 "Rapid Photometry of Supernova 1987A: A 2.14 ms Pulsar?", *New Astronomy*, **5**, 243-283

A. G. Lyne, A. Brinklow, J. Middleditch, D. C. Backer, & T. R. Clifton, 1987 "The discovery of a millisecond pulsar in the globular cluster M28", *Nature*, **313**, 659-661.

J. Middleditch & C. R. Pennypacker, 1985 "Optical pulsations in the large Magellanic Cloud Remnant 0540-69.3", *Nature*, **313**, 659-661.

J. Middleditch, K. O. Mason, J. E. Nelson, 1981 "4U 1626-67 - A prograde spinning X-ray pulsar in a 2500 s binary system", *The Astrophysical Journal*, **244**, 1001-1021.

J. Middleditch, & J. Nelson, 1976 "Studies of optical pulsations from HZ Her/Her X-1: a determination of the mass of the neutron star", *The Astrophysical Journal*, **208**, 567-586.

* Authored about 100 papers on astrophysical problems, with an emphasis on the application of computers to the solution of these problems, but later on the validity of the science.