Abstract Submitted
for the HAW14 Meeting of
The American Physical Society

MINBAR: A comprehensive study of 6000+ thermonuclear shell flashes from neutron stars DUNCAN GALLOWAY, Monash Centre for Astrophysics, JEAN IN 'T ZAND, SRON, Netherlands, JÉRÔME CHENEVEZ, DTU Space, LAURENS KEEK, Georgia Tech, CELIA SANCHEZ-FERNANDEZ, ERIK KUULKERS, ESAC, HAUKE WORPEL, NATHANAEL LAMPE, Monash Centre for Astrophysics, MULTI-INSTRUMENT BURST ARCHIVE (MINBAR) COLLABORATION — Thermonuclear (type-I) X-ray bursts have been observed from accreting neutron stars since the early 1970s. These events serve as a valuable diagnostic tool to constrain the source distance; accretion rate; accreted fuel composition, and hence evolutionary status of the donor; and even the neutron star mass and radius. Additionally, large samples of bursts can serve to test models describing ignition and burning, and hence constrain the nuclear processes taking place. The Multi-INstrument Burst ARchive (MINBAR) is an effort to combine large samples of burst observations from *BeppoSAX*/WFC, *RXTE*/PCA, and *INTEGRAL*/JEM-X. We have searched observations of the approximately 100 known X-ray burst sources, and have accumulated more than 6000 events from 83 sources over the past 20 years. We describe the assembly of the catalogue, the analysis procedures, and the science outcomes and prospects. Notable results so far include a systematic analysis of short recurrence time bursts; evidence for accretion rate variation during bursts; studies of the burst behaviour of new transients; and long-duration bursts including super bursts.

Duncan Galloway
Monash Centre for Astrophysics

Date submitted: 01 Jul 2014 Electronic form version 1.4