

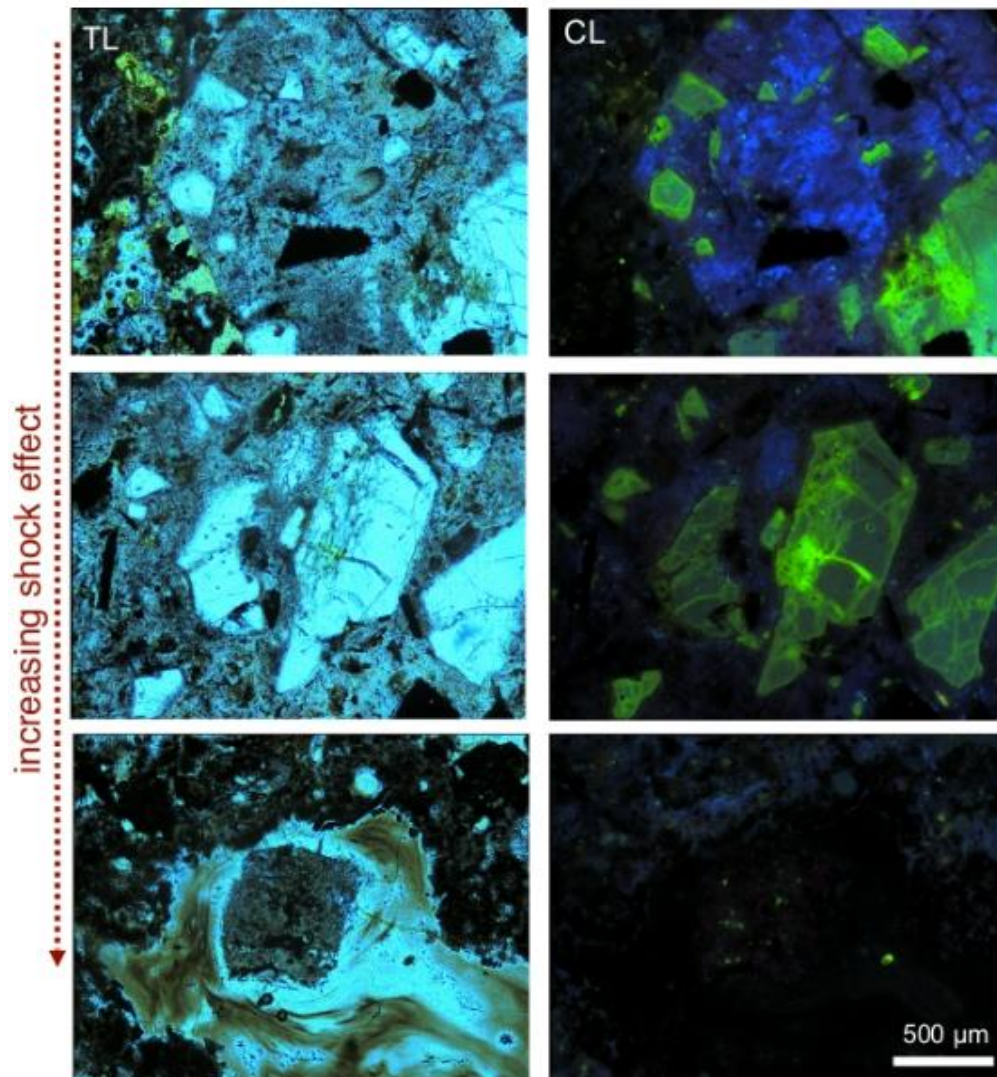
Seminar: “A petrographic approach to understanding impact processes”

28/06/2018 - 16:00

AMGC Seminar Thursday June 28 2018 – 16.00 h

By Lidia Pittarello “A petrographic approach to understanding impact processes series”

Meteorite impact cratering is generally investigated through observations, experiments, and numerical modeling. These three approaches can succeed only by mutual cooperation. Observers provide physical parameters to constrain experiments and models, but in turn need lab and numerical simulations to understand the mechanism that produced the observed features. Impact cratering is particularly complicated to be simulated and modeled due to the extreme temperature, pressure, and strain rate reached, which are far from the thermodynamic equilibrium. Thus, observations, especially at the micro-scale, where transitional equilibria have been quenched, are fundamental to constrain shock processes. A virtual journey through some of the petrographic techniques, such as optical and electron microscopy, universal-stage, Raman spectroscopy, and cathodoluminescence, which are used by observers to advance our knowledge of impact cratering on Earth and of collisions in the meteorite history by investigating shock effects in minerals and rocks, will be presented.



TL=transmitted light
CL=cathodoluminescence

Plane-polarized light microphotographs and optical cathodoluminescence of impactites from the El'gytgyyn impact structure, Russia. After Pittarello et al. 2015.