The outbursts of comet 29P/SW-1 and C/2020 R4 (ATLAS)

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We present an analysis of the dynamic dust coma of Centaur 29P/Schewassmann-Wachmann 1 and long-period comet C/2020 R4 (Atlas). Comet P/SW1 has exhibited a considerable level of activity (so-called outbursts) since its discovery in 1925. In 2011, we found the morphology of comet P/SW 1 showed dust features in the form of jets, spirals and shells. This year, we have obtained multi-wavelength observations of 29P/SW 1's dust coma at Lulin observatory and we will present preliminary results including the morphological analysis and the colour (B-V, V-R, and R-I) investigation of the dust coma when comet is at quiet and active period.

At least three outbursts found within two weeks from comet Atlas is unusual for long-period comet. However, we didn't find any new jet features and fragments from the morphology of comet Atlas. Except for the color investigation during the outburst, we will also give the dust/gas production rates in the comparison between pre- and post-outbursts.