Distinct and Dramatic Water Dissociation on GaP (111) tracked by Near-Ambient Pressure X-ray Photoelectron Spectroscopy

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Supplementary Information

\textbf{Fig. S1} Photoelectron survey spectra of the GaP (111) surface for samples as received and after Ar\textsuperscript{+} bombardment.
**Fig. S2** High resolution photoelectron spectra of Ga 2p\(_{3/2}\), Ga 3d and P 2p at RT under different H\(_2\)O pressures. The photoelectron spectra for Ga 2p\(_{3/2}\) and P 2p were normalized to unit intensity of the main peaks and shifted to the same background lines.

**Fig. S3** High resolution photoelectron spectra of Ga 2p\(_{3/2}\), Ga 3d and P 2p at the H\(_2\)O pressure of 0.1 mbar (0.5 mabr) and different temperatures. The photoelectron spectra for Ga 2p\(_{3/2}\) were normalized to unit intensity of the main peaks and shifted to the same background lines.
**Fig. S4** High resolution photoelectron spectra of Ga 2p$_{3/2}$ at the H$_2$O pressure of 5 mbar and RT (a) and at the H$_2$O pressure of 0.1 mbar and 773 K obtained within 4 hours (5 scans) (b).