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Rotational alignments in ²³⁵Np¹ AARON HURST, Lawrence Livermore National Laboratory, GAMMASPHERE COLLABORATION, CHICO COL-LABORATION — The $j_{15/2}$ neutron-orbital alignment has been studied by exploring γ - ray transitions of yrast states in ²³⁵Np, populated utilizing the nucleontransfer reaction ²³⁷Np(¹¹⁶Sn,¹¹⁸Sn). The experiment was carried out at Argonne National Laboratory using the GAMMASPHERE/CHICO setup. The ground-state band for this nucleus has been delineated to high spin for the first time, with the $\alpha = +1/2$ and $\alpha = -1/2$ signature partners reaching spin- state population levels of $49/2^+ \hbar$ and $47/2^+ \hbar$, respectively. Definite assignments for these intraband transitions were established through γ -ray cross correlations between ²³⁵Np and ¹¹⁸Sn and events where at least three γ rays corresponding to Np-like particles were detected. These transitions reveal clear upbends in the aligned-angular momentum and kinematic moment of inertia plots; this observation is indicative of a strong interaction between an aligned *s*-band and the *g*-band in ²³⁵Np. The role of the $\nu j_{15/2}$, $\pi h_{9/2}$, and $\pi i_{13/2}$ alignment mechanisms in the deformed U–Pu region will be discussed in light of the current spectroscopic data and in the framework of the CSM.

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