

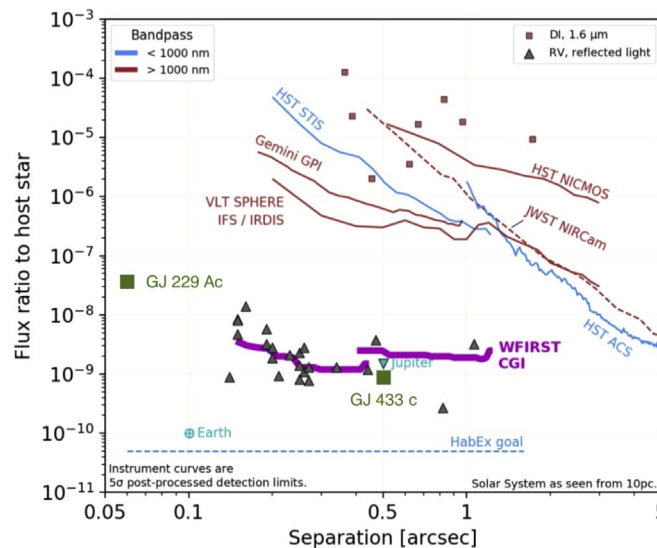


# Erratum: “Search for Nearby Earth Analogs. II. Detection of Five New Planets, Eight Planet Candidates, and Confirmation of Three Planets around Nine Nearby M Dwarfs” (ApJS, 246, 11)

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In our recently published article (Feng et al. 2020), we claimed that GJ 180 d and GJ 229A c can be directly imaged by the Near Infrared Camera (NIRCAM) instrument of *James Webb Space Telescope* (*JWST*). We found this statement to not be accurate according to A. Boss (2020, private communication) at the Carnegie Institution of Washington. The maximum reflected flux,  $F_{\text{ref}}$ , of a planet with a radius of  $R_p$  and a semimajor axis of  $a_p$  is about  $F_* A R_p^2 / a_p^2$ , where  $A$  is the planetary albedo and  $F_*$  is the flux of the host star. Assuming an Earth-like density and an Earth-like albedo of 0.43 (Mallama et al. 2017) and using the maximum a posteriori orbital parameter values for GJ 180 d and GJ 229A c (Feng et al. 2020), the flux ratios for them are, respectively,  $3.1 \times 10^{-8}$  and  $2.7 \times 10^{-8}$ . With separations of 25 and 59 mas from their host stars, GJ 180 d and GJ 229A c cannot be imaged by *JWST* or the *Wide Field Infrared Survey Telescope* (*WFIRST*) according to Bailey et al. (2018), although they can be imaged by HabEx (Gaudi et al. 2020), as shown in Figure 1, which is adapted from Figure 1 of Bailey et al. (2018) and Figure 2.1–2 of Gaudi et al. (2020).

We further investigate the possibility of direct imaging for GJ 433 c, a cold Neptune detected in our work (Feng et al. 2020). Assuming a Neptune-like density and a Neptune-like albedo of 0.44 (Mallama et al. 2017), the reflected light flux ratio for GJ 433 c is  $7.8 \times 10^{-10}$ . Although this planet is barely detectable using the CGI of *WFIRST*, it can be easily detected by HabEx, as shown in Figure 1.



**Figure 1.** Planet-to-star flux ratio limit of HabEx as well as existing and planned high-contrast direct imaging instruments. The solid and dashed lines denote the flux ratio limit. The triangles and squares represent the planets detected through the radial velocity and direct imaging methods, respectively. The cyan points represent the Earth and Jupiter at 10 pc. The colors of lines encode wavelengths. The dark-green squares denote GJ 433 c and GJ 229 Ac. GJ 180 d is not shown because its separation is beyond the range of the x axis. Like GJ 229 Ac, it can still be detected by HabEx due to the use of star shade. Figure courtesy of K. Stapelfeldt, T. Meshkat, and V. Bailey.

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