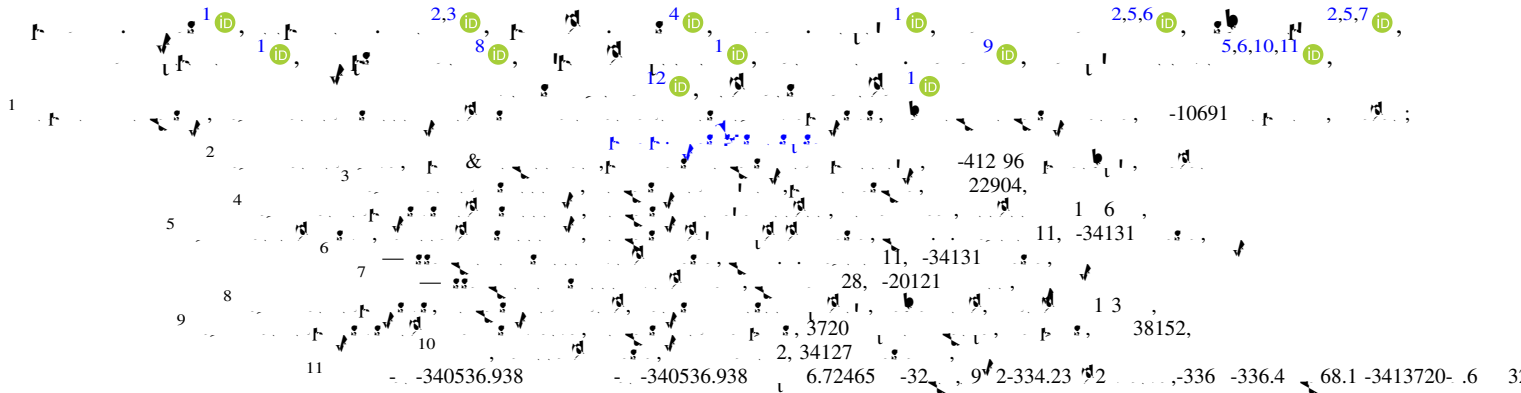
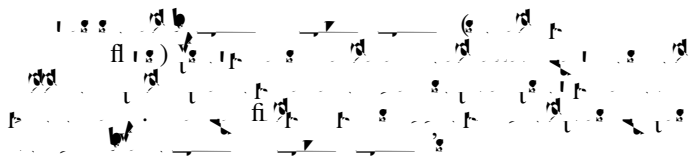


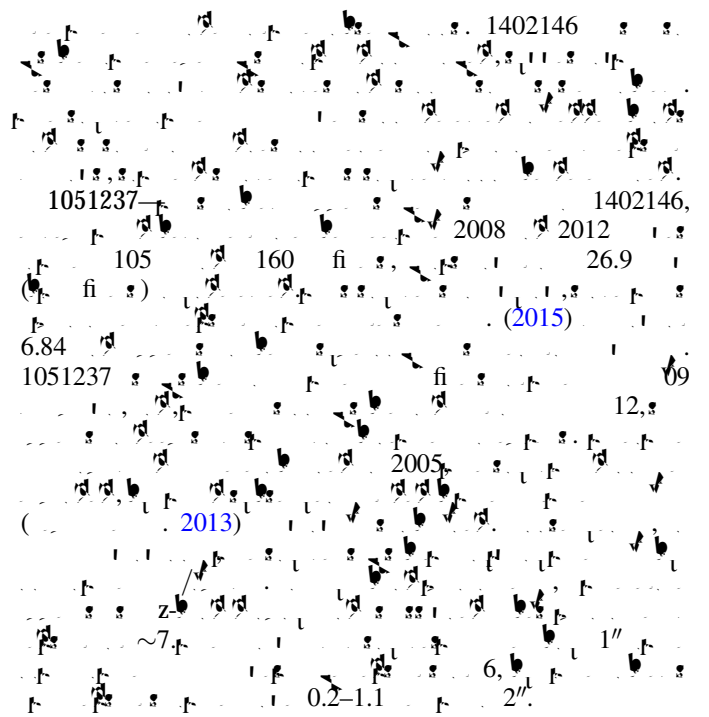
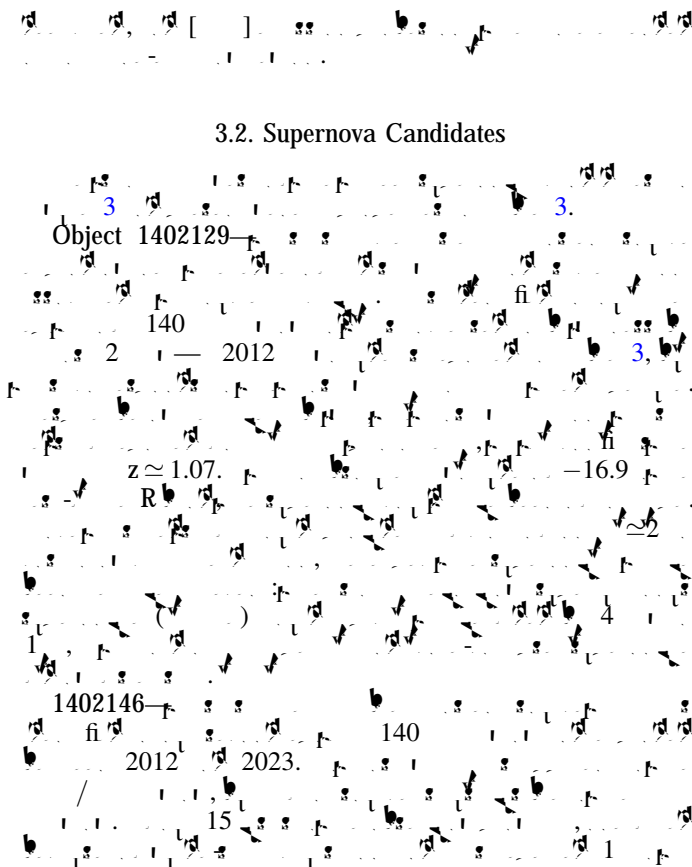
Glimmers in the Cosmic Dawn: A Census of the Youngest Supermassive Black Holes by Photometric Variability*





1. ()

3.2. Supernova Candidates



... 3 ...
... 6 ...
... 2024; ...
... 2024; ...
... $z > 6$... 3 ... 4
... 4.
...
...
Object 1052123
... $z > 6$... 4.
... 5.
... 2009 ... 2012 ... 105 ... 160 ...
0.3 ...
... 105 - 140 ... 0.42 ...

(2024, 8/31, 3.85, $\sim 1.1 \times 10^{-3}$, $M \simeq 18.6$, $n \sim 4$, $M \simeq -17$, (2023) , $L^* = -20$, $\sim 7.7 \times 10^{-3}$)

(2003). $n(z=0) \sim 10^{-4} \text{ Mpc}^{-3}$ (2016)
 $n(z=0) \sim 10^{-7} - 10^{-6} \text{ Mpc}^{-3}$ (2019)
 (2019); (2023)
 (2008; 2009; 2015)
 $\sim 10^5 M_{\odot}$
 $\sim 10 M_{\odot}$
 (2006; 2006) (2019) (2023)
 $n(z=0) \sim 5 \times 10^{-3} \text{ Mpc}^{-3}$
 $d_s \simeq 100 \text{ Mpc}$ ($z \sim 30$)
 $n(z \sim 30) \sim 3 \text{ Mpc}^{-3}$

... & ... 2013, 428, 3227
... 2013, ... 763, 7
... 2006, ... 132, 117
... & ... 2002, ... 114, 144
... 2023, ... 952, 142
... & ... 2006, ... 373, 128
... 2011, ... 197, 35
... 2023, ... 959, 39
... & ... 2020, ... 58, 27
... 2024, ...:2405.