On the Number Density of Very High Redshift Quasars (VHzQs), or, "What do I point JWST at??"

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Abstract

This is a sample document which demonstrates some of the basic features of LaTeX. You can easily reformat it for different document or bibliography styles.

1 Section Heading

Survey	Area (deg^2)	N_Q	Magnitude Range	z-range	Reference
GOODS(+SDSS)	0.1+(4200)	13(+656)	$22.25 < z_{850} < 25.25$	$3.5 < z < 5.2$	**?**
VVDS	0.62	130	$17.5 < I_{AB} < 24.0$	$0 < z < 5$	**?**
COMBO-17	0.8	192	$R < 24$	$1.2 < z < 4.8$	**?**
COSMOS[a]	1.64	8	$22 < i' < 24$	$3.7 \lesssim z \lesssim 4.7$	**?**
COSMOS	1.64	[b]0	$22 < i' < 24$	$4.5 \lesssim z \lesssim 5.5$	**?**
COSMOS	1.64	155	$16 \leq I_{AB} \leq 25$	$3 < z < 5$	**?**
NDWFS+DFS[c]	4	24	$R \leq 24$	$3.7 < z < 5.1$	**?**
SFQS[d]	4	414	$g < 22.5$	$z < 5$	**?**
BOSS[e]+MMT	14.5+3.92	1 877	$g \lesssim 23$	$0.7 < z < 4.0$	**?**
2SLAQ[f]	105	5 645	$18.00 < g < 21.85$	$z \leq 2.1$	**?**
SDSS[g]	182	39	$i \leq 20$	$3.6 < z < 5.0$	**?**
SDSS+2SLAQ	192	10 637	$18.00 < g < 21.85$	$0.4 < z < 2.6$	**?**
SDSS Main+Deep	195	6	$z_{AB} < 21.80$	$z \sim 6$	**?**
BOSS Stripe 82	**220**	**5 476**	$i >$**18.0 and** $g <$**22.3**	**2.2**$< z <$**3.5**	**?**
CFHQS[h]	500	19	$z' < 22.63$	$5.74 < z < 6.42.$	**?**
2QZ[i]	700	23 338	$18.25 < b_J < 20.85$	$0.4 < z < 2.1$	**??**
SDSS DR3	1622	15 343	$i \leq 19.1$ and $i \leq 20.2$	$0.3 < z < 5.0$	**?**
BOSS DR9	**2236**	[j]**23 201**	$g <$**22.00 or** $r <$**21.85**	**2.2**$< z <$**3.5**	**this paper**
SDSS DR7	6248	57 959	$i \leq 19.1$ and $i \leq 20.2$	$0.3 < z < 5.0$	**?**
SDSS Type 2	6293	887	$L_{OIII} \geq 10^{8.3} L_\odot$	$z < 0.83$	**?**
SDSS DR6[k]	8417	$\gtrsim$ 850,000	$i < 21.3$	$z \sim 2$ and $z \sim 4.25$	**?**

Table 1: Selected optical quasar luminosity function measurements.
[a]Cosmic Evolution Survey (**?**).
[b]No Type-1 quasars were identified, though a low-luminosity $z \sim 5.07$ Type-2 quasar was discovered.
[c]NOAO Deep Wide-Field Survey (**?**) and the Deep Lens Survey (**?**).
[d]SDSS Faint Quasar Survey.
[e]The "boss21" area on the SDSS Stripe 82 field.
[f]2dF-SDSS LRG And QSO Survey (**?**).
[g]Photometric sample from SDSS; spectroscopic confirmation from SDSS and other telescopes.
[h]Canada-France High-z Quasar Survey (**?**)
[i]2dF Quasar Redshift Survey (**?**).
[j]From our "uniform" sample defined in Section **??**
[k]From a catalog of >1,000,000 photometrically classified quasar candidates.

1.1 Subsection heading

The QLF is defined as the number density of quasars per unit luminosity. It is often described by a double power-law (**???**, hereafter, R06) of the form

$$\Phi(L,z) = \frac{\phi_*^{(L)}}{(L/L^*)^{\alpha} + (L/L^*)^{\beta}} \tag{1}$$

with a characteristic, or break, luminosity L_*. An alternative definition of this form of the QLF gives the number density of quasars per unit magnitude,

$$\Phi(M,z) = \frac{\phi_*^{(M)}}{10^{0.4(\alpha+1)[M-M^*(z)]} + 10^{0.4(\beta+1)[M-M^*(z)]}} \tag{2}$$

The dimensions of Φ differ in the two conventions. We have followed R06 such that α describes the faint end QLF slope, and β the bright end slope. The α/β convention in some other works (e.g., **?**) is in the opposite sense from our definition. Evolution of the QLF can be encoded in the redshift dependence of the break luminosity, ϕ_*, and also potentially in the evolution of the power-law slopes.

References