	Instruments ( Total Ozone and Un	nkehr Observation Data at Syowa Station )
YEAR	Instrument	Observation method
1961	Shimadzu Dobson Spectrophotometer #5702	AD Direct sun
1962		
-		
1963		
1964		
1965		
1966	Shimaday Dobson Sportrophotometer #5702	AD Direct sun, Zenith sky
_	Shimadzu Dobson Spectrophotometer #5702	·
1967	Shimadzu Dobson Spectrophotometer #5702	AD Direct sun, Zenith sky
1968	Shimadzu Dobson Spectrophotometer #5702	AD Direct sun, Zenith sky
1969	Shimadzu Dobson Spectrophotometer #5702	AD Direct sun, Zenith sky / AD Focused moon
-		
1970	Shimadzu Dobson Spectrophotometer #5702	AD Direct sun, Zenith sky
1971	Shimadzu Dobson Spectrophotometer #5702	AD Direct sun, Zenith sky
1972	Shimadzu Dobson Spectrophotometer #5702	AD Direct sun, Zenith sky
1973		
1974	China dan Daham Caratanahatan 45706	AD Direct our Zerith dec
-	Shimadzu Dobson Spectrophotometer #5706	AD Direct sun, Zenith sky
1975	Shimadzu Dobson Spectrophotometer #5706	AD Direct sun, Zenith sky
1976	Shimadzu Dobson Spectrophotometer #5706	AD Direct sun, Zenith sky
1977	Shimadzu Dobson Spectrophotometer #5706 (to 2nd February)	AD Direct sun, Zenith sky
	Beck Dobson Spectrophotometer #119 (from 3rd February)	
1978	Beck Dobson Spectrophotometer #119	AD Direct sun, Zenith sky
-		•
1979	Beck Dobson Spectrophotometer #119	AD Direct sun, Zenith sky
1980	Beck Dobson Spectrophotometer #119	AD Direct sun, Zenith sky
1981	Beck Dobson Spectrophotometer #119	AD Direct sun, Zenith sky
	Beck Dobson Spectrophotometer #119 (to 31st January)	
1982	Beck Dobson Spectrophotometer #122 (from 1st February)	AD Direct sun, Zenith sky / AD Focused moon
1983	Beck Dobson Spectrophotometer #122	AD Direct sun, Zenith sky / AD Focused moon
-		
1984	Beck Dobson Spectrophotometer #122	AD Direct sun, Zenith sky / AD Focused moon
1985	Beck Dobson Spectrophotometer #122	AD Direct sun, Zenith sky / AD Focused moon
1986	Beck Dobson Spectrophotometer #122 (to 26th January)	AD Direct sun, Zenith sky / AD Focused moon
1200	Beck Dobson Spectrophotometer #119 (from 27th January)	AD Direct sun, Zeinen sag / AD Pocused moon
1987	Beck Dobson Spectrophotometer #119	AD Direct sun, Zenith sky / CD Direct sun / AD Focused moon
1988	Beck Dobson Spectrophotometer #119	AD Direct sun, Zenith sky / CD Direct sun / AD Focused moon
1989		
1989	Beck Dobson Spectrophotometer #119	AD Direct sun, Zenith sky / CD Direct sun / AD Focused moon
1990	Beck Dobson Spectrophotometer #119 (to 31st January)	AD Direct sun, Zenith sky / CD Direct sun / AD Focused moon
L	Beck Dobson Spectrophotometer #122 (from 1st February)	·
1991	Beck Dobson Spectrophotometer #122	AD Direct sun, Zenith sky / CD Direct sun / AD Focused moon
1992	Beck Dobson Spectrophotometer #122	AD Direct sun, Zenith sky / CD Direct sun / AD Focused moon
1993	Beck Dobson Spectrophotometer #122	AD Direct sun, Zenith sky / CD Direct sun / AD Focused moon
	Beck Dobson Spectrophotometer #122 (to 31st January)	·
1994	Beck Dobson Spectrophotometer #119 (from 1st February)	AD Direct sun, Zenith sky / CD Direct sun, Zenith sky / AD Focused moon
1995	Beck Dobson Spectrophotometer #119	AD Direct sun, Zenith sky / CD Direct sun, Zenith sky / AD Focused moon
1996	Beck Dobson Spectrophotometer #119	AD Direct sun, Zenith sky / CD Direct sun, Zenith sky / AD Focused moon
1770		AD Direct sun, Zeniun sky/ CD Direct sun, Zeniun sky/ AD Focused infoon
1997	Beck Dobson Spectrophotometer #119 (to 31st January) Beck Dobson Spectrophotometer #122 (from 1st February)	AD Direct sun, Zenith sky / CD Direct sun, Zenith sky / AD Focused moon
	Beck Dobson Spectrophotometer #122 (from 1st February)	
1998	Beck Dobson Spectrophotometer #129 (from 1st February)	AD Direct sun, Zenith sky / CD Direct sun, Zenith sky / AD Focused moon
1999	Beck Dobson Spectrophotometer #119	AD Direct sun, Zenith sky / CD Direct sun, Zenith sky / AD Focused moon
_		
2000	Beck Dobson Spectrophotometer #119	AD Direct sun, Zenith sky / CD Direct sun, Zenith sky / AD Focused moon
2001	Beck Dobson Spectrophotometer #119	AD Direct sun, Zenith sky / CD Direct sun, Zenith sky / AD Focused moon
2002	Beck Dobson Spectrophotometer #119 (to 31st January)	AD Direct sun, Zenith sky / CD Direct sun, Zenith sky / AD Focused moon
2002	Beck Dobson Spectrophotometer #122 (from 1st February)	Sun, Zeniai say / CD Direct sun, Zeniai say / AD Focused illooli
2003	Beck Dobson Spectrophotometer #122 (to 31st January)	AD Direct sun, Zenith sky / CD Direct sun, Zenith sky / AD Focused moon
	Beck Dobson Spectrophotometer #119 (from 1st February)	,
2004	Beck Dobson Spectrophotometer #119	AD Direct sun, Zenith sky / CD Direct sun, Zenith sky / AD Focused moon
2005	Beck Dobson Spectrophotometer #119	AD Direct sun, Zenith sky / CD Direct sun, Zenith sky / AD Focused moon
2006	Beck Dobson Spectrophotometer #119	AD Direct sun, Zenith sky / CD Direct sun, Zenith sky / AD Focused moon
	Beck Dobson Spectrophotometer #119 (to 31st January)	·
2007	Beck Dobson Spectrophotometer #119 (to 31st January)  Beck Dobson Spectrophotometer #122 (from 1st February)	AD Direct sun, Zenith sky / CD Direct sun, Zenith sky / AD Focused moon
	Beck Dobson Spectrophotometer #122 (to 31st January)	155
2008	Beck Dobson Spectrophotometer #119 (from 1st February)	AD Direct sun, Zenith sky / CD Direct sun, Zenith sky / AD Focused moon
2009	Beck Dobson Spectrophotometer #119	AD Direct sun, Zenith sky / CD Direct sun, Zenith sky / AD Focused moon
2010	Beck Dobson Spectrophotometer #119	·
2010		AD Direct sun, Zenith sky / CD Direct sun, Zenith sky / AD Focused moon
2011	Beck Dobson Spectrophotometer #119 (to 31st January)	AD Direct sun, Zenith sky / CD Direct sun, Zenith sky / AD Focused moon
2012	Beck Dobson Spectrophotometer #122 (from 1st February)	· · · · · · · · · · · · · · · · · · ·
2012	Beck Dobson Spectrophotometer #122	AD Direct sun, Zenith sky / CD Direct sun, Zenith sky / AD Focused moon
2013	Beck Dobson Spectrophotometer #122	AD Direct sun, Zenith sky / CD Direct sun, Zenith sky / AD Focused moon
	Beck Dobson Spectrophotometer #122 (to 14th January)	
2014	Beck Dobson Spectrophotometer #122 (to 14th January)	AD Direct sun, Zenith sky / CD Direct sun, Zenith sky / AD Focused moon
2015	Beck Dobson Spectrophotometer #119	AD Direct sun, Zenith sky / CD Direct sun, Zenith sky / AD Focused moon
2016	Beck Dobson Spectrophotometer #119	AD Direct sun, Zenith sky / CD Direct sun, Zenith sky / AD Focused moon
	Beck Dobson Spectrophotometer #119 (to 13th January)	
2017	Beck Dobson Spectrophotometer #119 (to 13th January)  Beck Dobson Spectrophotometer #122 (from 14th January)	AD Direct sun, Zenith sky / CD Direct sun, Zenith sky / AD Focused moon
L		
2018	Beck Dobson Spectrophotometer #122 (to 31st January)	AD Direct sun, Zenith sky / CD Direct sun, Zenith sky / AD Focused moon
	Beck Dobson Spectrophotometer #119 (from 1st February)	· · · · · · · · · · · · · · · · · · ·
2019	Beck Dobson Spectrophotometer #119	AD Direct sun, Zenith sky / CD Direct sun, Zenith sky / AD Focused moon
2020	Beck Dobson Spectrophotometer #119	AD Direct sun, Zenith sky / CD Direct sun, Zenith sky / AD Focused moon
2021	Beck Dobson Spectrophotometer #119	AD Direct sun, Zenith sky / CD Direct sun, Zenith sky / AD Focused moon
2021		, , , , , , , , , , , , , , , , , , ,
2021	Beck Dobson Spectrophotometer #110 (to 31st January)	AD Direct sun Zenith sky / CD Direct sun Zenith sky
2021	Beck Dobson Spectrophotometer #119 (to 31st January) Kinn & Zonen Brewer MKIII Spectrophotometer #252	AD Direct sun, Zenith sky / CD Direct sun, Zenith sky
	Beck Dobson Spectrophotometer #119 (to 31st January) Kipp & Zonen Brewer MKIII Spectrophotometer #252 (from 1st February)	AD Direct sun, Zenith sky / CD Direct sun, Zenith sky Direct sun, Zenith sky, Focused Sun, Focused moon