

Supplemental information to:

Atmospheric histories and growth trends of C_4F_{10} , C_5F_{12} , C_6F_{14} , C_7F_{16} and C_8F_{18}

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Table S1: Northern and Southern Hemispheric Archived Air Measurements of C₄F₁₀.

Fill Date	Location	Mole Fraction [ppt]	S.D. [ppt]	n	Fill Date	Location	Mole Fraction [ppt]	S.D. [ppt]	n
29 Jun 1973	NH	0.009	0.001	3	26 Apr 1978	SH	0.019	0.000	1
9 Oct 1973	NH	0.015	0.001	4	7 Jul 1978	SH	0.020	0.001	3
9 Oct 1973	NH	0.015	0.005	5	6 Feb 1979	SH	0.020	0.001	3
21 Jun 1974	NH	0.019	0.009	7	23 May 1984	SH	0.043	0.003	4
1 Oct 1975	NH	0.016	0.001	3	6 Feb 1986	SH	0.048	0.003	4
4 Oct 1977	NH	0.019	0.001	3	28 May 1987	SH	0.055	0.004	6
4 Oct 1977	NH	0.019	0.002	3	21 Jun 1988	SH	0.062	0.002	3
10 Aug 1978	NH	0.018	0.002	3	19 May 1989	SH	0.069	0.005	8
15 Apr 1980	NH	0.026	0.003	4	26 Apr 1990	SH	0.078	0.005	3
6 May 1980	NH	0.036	0.003	4	29 Aug 1991	SH	0.077	0.001	3
23 Mar 1982	NH	0.036	0.003	8	23 Sep 1992	SH	0.088	0.005	5
7 May 1982	NH	0.056	0.001	5	11 Feb 1994	SH	0.091	0.001	3
10 Sep 1986	NH	0.076	0.002	4	8 Feb 1995	SH	0.113	0.005	2
29 Mar 1991	NH	0.095	0.002	3	23 Nov 1995	SH	0.112	0.004	3
18 Apr 1996	NH	0.119	0.004	2	4 Dec 1995	SH	0.105	0.005	5
1 Apr 1999	NH	0.137	0.008	8	20 Nov 1996	SH	0.113	0.003	4
1 Apr 1999	NH	0.141	0.006	10	7 Jan 1997	SH	0.110	0.005	5
1 Apr 1999	NH	0.139	0.001	3	30 May 1997	SH	0.121	0.004	4
28 Apr 2000	NH	0.150	0.002	3	15 Jul 1997	SH	0.116	0.003	7
20 Apr 2003	NH	0.159	0.004	7	25 Jun 1998	SH	0.127	0.008	5
20 Apr 2003	NH	0.162	0.007	5	13 Apr 1999	SH	0.131	0.007	5
14 Mar 2005	NH	0.166	0.004	8	1 Mar 2000	SH	0.134	0.005	6
6 Feb 2006	NH	0.166	0.003	7	14 Mar 2000	SH	0.134	0.005	5
20 Mar 2007	NH	0.166	0.004	9	26 Aug 2000	SH	0.143	0.002	3
12 Mar 2008	NH	0.168	0.001	5	15 Jan 2001	SH	0.135	0.008	4
2 Mar 2009	NH	0.175	0.006	8	27 Apr 2001	SH	0.152	0.002	4
4 Mar 2009	NH	0.180	0.003	2	19 Jul 2001	SH	0.147	0.008	5
17 Mar 2010	NH	0.177	0.005	9	4 Sep 2001	SH	0.153	0.006	3
17 Mar 2010	NH	0.176	0.004	11	20 Jun 2002	SH	0.148	0.007	6
17 Mar 2010	NH	0.176	0.005	13	17 Feb 2003	SH	0.152	0.008	5
18 Mar 2010	NH	0.174	0.007	9	3 Oct 2003	SH	0.155	0.008	5
25 Jun 2011	NH	0.181	0.008	7	22 Jan 2004	SH	0.148	0.007	6
26 Sep 2011	NH	0.180	0.008	7	1 Dec 2004	SH	0.157	0.007	18
					10 Feb 2005	SH	0.165	0.004	5
					28 Jun 2005	SH	0.160	0.009	18
					10 Feb 2006	SH	0.161	0.007	15
					4 Oct 2006	SH	0.158	0.002	6
					19 Oct 2006	SH	0.164	0.007	6
					11 Dec 2006	SH	0.158	0.004	4
					8 May 2007	SH	0.158	0.008	5
					22 Nov 2007	SH	0.163	0.006	5
					12 Aug 2008	SH	0.162	0.004	6
					16 Dec 2008	SH	0.165	0.002	5
					6 Mar 2009	SH	0.168	0.005	8
					10 Dec 2010	SH	0.171	0.005	23
					16 Dec 2010	SH	0.172	0.007	82

Table S2: Northern and Southern Hemispheric Archived Air Measurements of C₅F₁₂.

Fill Date	Location	Mole Fraction			Fill Date	Location	Mole Fraction		
		[ppt]	S.D. [ppt]	n			[ppt]	S.D. [ppt]	n
29 Jun 1973	NH	0.008	0.003	2	26 Apr 1978	SH	0.015	0.001	3
9 Oct 1973	NH	0.011	0.001	4	7 Jul 1978	SH	0.015	0.002	3
9 Oct 1973	NH	0.012	0.002	4	6 Feb 1979	SH	0.017	0.000	3
21 Jun 1974	NH	0.012	0.002	4	23 May 1984	SH	0.030	0.001	4
1 Oct 1975	NH	0.014	0.001	3	6 Feb 1986	SH	0.035	0.002	4
4 Oct 1977	NH	0.019	0.001	3	28 May 1987	SH	0.040	0.002	6
4 Oct 1977	NH	0.018	0.001	3	21 Jun 1988	SH	0.040	0.003	3
10 Aug 1978	NH	0.018	0.002	4	19 May 1989	SH	0.046	0.002	8
15 Apr 1980	NH	0.023	0.001	2	26 Apr 1990	SH	0.055	0.003	3
6 May 1980	NH	0.016	0.002	4	29 Aug 1991	SH	0.059	0.004	3
23 Mar 1982	NH	0.027	0.002	8	23 Sep 1992	SH	0.065	0.002	5
7 May 1982	NH	0.026	0.002	5	11 Feb 1994	SH	0.070	0.003	3
10 Sep 1986	NH	0.055	0.002	4	8 Feb 1995	SH	0.089	0.003	2
29 Mar 1991	NH	0.068	0.001	3	23 Nov 1995	SH	0.083	0.004	3
18 Apr 1996	NH	0.092	0.001	2	4 Dec 1995	SH	0.084	0.004	5
1 Apr 1999	NH	0.104	0.003	8	20 Nov 1996	SH	0.086	0.003	4
1 Apr 1999	NH	0.106	0.004	12	7 Jan 1997	SH	0.087	0.001	5
1 Apr 1999	NH	0.107	0.002	3	30 May 1997	SH	0.091	0.003	4
28 Apr 2000	NH	0.113	0.001	3	15 Jul 1997	SH	0.089	0.004	7
20 Apr 2003	NH	0.117	0.001	7	25 Jun 1998	SH	0.093	0.002	5
20 Apr 2003	NH	0.115	0.005	5	13 Apr 1999	SH	0.097	0.000	5
14 Mar 2005	NH	0.124	0.002	8	1 Mar 2000	SH	0.105	0.004	6
6 Feb 2006	NH	0.122	0.002	7	14 Mar 2000	SH	0.101	0.002	5
20 Mar 2007	NH	0.122	0.002	9	26 Aug 2000	SH	0.108	0.001	3
12 Mar 2008	NH	0.124	0.001	5	15 Jan 2001	SH	0.105	0.003	4
2 Mar 2009	NH	0.124	0.002	8	27 Apr 2001	SH	0.115	0.001	4
4 Mar 2009	NH	0.127	0.006	2	19 Jul 2001	SH	0.109	0.005	5
17 Mar 2010	NH	0.128	0.002	9	4 Sep 2001	SH	0.110	0.001	3
17 Mar 2010	NH	0.127	0.002	11	20 Jun 2002	SH	0.111	0.003	6
17 Mar 2010	NH	0.126	0.004	12	17 Feb 2003	SH	0.112	0.004	5
18 Mar 2010	NH	0.128	0.004	9	3 Oct 2003	SH	0.113	0.002	5
25 Jun 2011	NH	0.130	0.007	7	22 Jan 2004	SH	0.113	0.003	6
26 Sep 2011	NH	0.127	0.006	7	1 Dec 2004	SH	0.115	0.002	18
					10 Feb 2005	SH	0.114	0.002	5
					28 Jun 2005	SH	0.114	0.003	18
					10 Feb 2006	SH	0.115	0.004	15
					4 Oct 2006	SH	0.117	0.003	7
					19 Oct 2006	SH	0.115	0.003	6
					11 Dec 2006	SH	0.115	0.005	4
					8 May 2007	SH	0.119	0.001	5
					22 Nov 2007	SH	0.120	0.003	5
					12 Aug 2008	SH	0.118	0.004	6
					16 Dec 2008	SH	0.119	0.003	5
					6 Mar 2009	SH	0.119	0.004	8
					10 Dec 2010	SH	0.122	0.005	25
					16 Dec 2010	SH	0.126	0.003	79

Table S3: Northern and Southern Hemispheric Archived Air Measurements of C₆F₁₄.

Fill Date	Location	Mole Fraction		n	Fill Date	Location	Mole Fraction		n
		[ppt]	S.D. [ppt]				[ppt]	S.D. [ppt]	
29 Jun 1973	NH	0.001	0.002	3	26 Apr 1978	SH	0.013	0.001	2
9 Oct 1973	NH	0.000	0.001	4	7 Jul 1978	SH	0.011	0.001	3
9 Oct 1973	NH	0.001	0.003	5	6 Feb 1979	SH	0.005	0.008	3
21 Jun 1974	NH	0.002	0.003	7	23 May 1984	SH	0.031	0.003	4
1 Oct 1975	NH	0.003	0.003	3	6 Feb 1986	SH	0.036	0.004	4
4 Oct 1977	NH	0.007	0.002	3	28 May 1987	SH	0.044	0.003	6
4 Oct 1977	NH	0.004	0.004	3	21 Jun 1988	SH	0.041	0.002	3
10 Aug 1978	NH	0.000	0.000	4	19 May 1989	SH	0.048	0.003	8
10 Aug 1978	NH	0.000	0.000	3	26 Apr 1990	SH	0.057	0.004	3
15 Apr 1980	NH	0.017	0.003	3	29 Aug 1991	SH	0.057	0.004	3
6 May 1980	NH	0.002	0.002	4	23 Sep 1992	SH	0.064	0.003	5
23 Mar 1982	NH	0.001	0.001	8	11 Feb 1994	SH	0.075	0.003	3
7 May 1982	NH	0.000	0.000	5	8 Feb 1995	SH	0.097	0.002	2
10 Sep 1986	NH	0.023	0.001	4	23 Nov 1995	SH	0.101	0.003	3
29 Mar 1991	NH	0.078	0.003	3	4 Dec 1995	SH	0.103	0.004	5
18 Apr 1996	NH	0.152	0.002	2	20 Nov 1996	SH	0.121	0.001	4
1 Apr 1999	NH	0.194	0.004	8	7 Jan 1997	SH	0.125	0.002	5
1 Apr 1999	NH	0.198	0.005	12	30 May 1997	SH	0.140	0.003	4
1 Apr 1999	NH	0.204	0.003	3	15 Jul 1997	SH	0.137	0.005	7
28 Apr 2000	NH	0.213	0.003	3	25 Jun 1998	SH	0.162	0.004	5
20 Apr 2003	NH	0.244	0.004	7	13 Apr 1999	SH	0.178	0.004	5
20 Apr 2003	NH	0.239	0.003	5	1 Mar 2000	SH	0.191	0.008	6
14 Mar 2005	NH	0.252	0.003	8	14 Mar 2000	SH	0.188	0.005	5
6 Feb 2006	NH	0.261	0.004	6	15 Jan 2001	SH	0.200	0.006	4
20 Mar 2007	NH	0.263	0.001	8	19 Jul 2001	SH	0.212	0.008	5
12 Mar 2008	NH	0.270	0.004	5	20 Jun 2002	SH	0.216	0.005	6
2 Mar 2009	NH	0.270	0.004	8	17 Feb 2003	SH	0.222	0.003	5
4 Mar 2009	NH	0.264	0.002	2	3 Oct 2003	SH	0.231	0.005	5
17 Mar 2010	NH	0.274	0.004	9	22 Jan 2004	SH	0.229	0.007	6
17 Mar 2010	NH	0.276	0.003	11	1 Dec 2004	SH	0.236	0.005	18
17 Mar 2010	NH	0.274	0.005	11	10 Feb 2005	SH	0.241	0.010	5
18 Mar 2010	NH	0.276	0.004	9	28 Jun 2005	SH	0.240	0.006	18
25 Jun 2011	NH	0.278	0.005	7	10 Feb 2006	SH	0.248	0.010	15
26 Sep 2011	NH	0.295	0.004	7	4 Oct 2006	SH	0.250	0.006	6
					19 Oct 2006	SH	0.251	0.007	6
					11 Dec 2006	SH	0.248	0.004	4
					8 May 2007	SH	0.252	0.008	5
					22 Nov 2007	SH	0.255	0.009	5
					12 Aug 2008	SH	0.256	0.006	6
					16 Dec 2008	SH	0.263	0.007	5
					6 Mar 2009	SH	0.265	0.005	8
					10 Dec 2010	SH	0.270	0.005	24
					16 Dec 2010	SH	0.272	0.004	69

Table S4: Northern and Southern Hemispheric Archived Air Measurements of C₇F₁₆.

Fill Date	Location	Mole Fraction		n	Fill Date	Location	Mole Fraction		n
		[ppt]	S.D. [ppt]				[ppt]	S.D. [ppt]	
29 Jun 1973	NH	0.000	0.000	3	26 Apr 1978	SH	0.012	0.001	3
9 Oct 1973	NH	0.000	0.000	4	7 Jul 1978	SH	0.010	0.000	3
9 Oct 1973	NH	0.000	0.000	5	6 Feb 1979	SH	0.012	0.001	3
21 Jun 1974	NH	0.000	0.000	7	23 May 1984	SH	0.022	0.001	4
1 Oct 1975	NH	0.000	0.000	3	6 Feb 1986	SH	0.025	0.002	4
4 Oct 1977	NH	0.004	0.005	3	28 May 1987	SH	0.030	0.002	6
4 Oct 1977	NH	0.000	0.000	3	21 Jun 1988	SH	0.032	0.001	3
10 Aug 1978	NH	0.000	0.000	4	19 May 1989	SH	0.030	0.001	8
10 Aug 1978	NH	0.001	0.002	3	26 Apr 1990	SH	0.045	0.003	3
15 Apr 1980	NH	0.014	0.001	4	29 Aug 1991	SH	0.045	0.002	3
6 May 1980	NH	0.000	0.000	4	23 Sep 1992	SH	0.048	0.002	5
23 Mar 1982	NH	0.000	0.000	8	11 Feb 1994	SH	0.061	0.002	3
7 May 1982	NH	0.000	0.000	5	8 Feb 1995	SH	0.069	0.000	2
10 Sep 1986	NH	0.012	0.000	3	23 Nov 1995	SH	0.057	0.002	3
29 Mar 1991	NH	0.051	0.004	3	4 Dec 1995	SH	0.064	0.002	5
18 Apr 1996	NH	0.069	0.000	2	20 Nov 1996	SH	0.067	0.001	4
1 Apr 1999	NH	0.083	0.002	8	7 Jan 1997	SH	0.071	0.002	5
1 Apr 1999	NH	0.084	0.002	11	30 May 1997	SH	0.070	0.002	4
1 Apr 1999	NH	0.079	0.003	3	15 Jul 1997	SH	0.070	0.002	7
28 Apr 2000	NH	0.086	0.001	3	25 Jun 1998	SH	0.078	0.001	5
20 Apr 2003	NH	0.094	0.003	7	13 Apr 1999	SH	0.077	0.001	5
20 Apr 2003	NH	0.101	0.002	5	1 Mar 2000	SH	0.081	0.003	6
14 Mar 2005	NH	0.103	0.004	7	14 Mar 2000	SH	0.083	0.003	5
6 Feb 2006	NH	0.110	0.003	7	15 Jan 2001	SH	0.086	0.002	4
20 Mar 2007	NH	0.113	0.003	9	17 Feb 2003	SH	0.090	0.002	5
12 Mar 2008	NH	0.118	0.003	5	3 Oct 2003	SH	0.094	0.002	5
2 Mar 2009	NH	0.120	0.004	8	22 Jan 2004	SH	0.093	0.003	6
4 Mar 2009	NH	0.123	0.004	2	1 Dec 2004	SH	0.096	0.003	18
17 Mar 2010	NH	0.122	0.005	9	10 Feb 2005	SH	0.097	0.003	5
17 Mar 2010	NH	0.123	0.007	11	28 Jun 2005	SH	0.098	0.003	18
17 Mar 2010	NH	0.122	0.005	13	10 Feb 2006	SH	0.100	0.002	15
18 Mar 2010	NH	0.119	0.003	8	4 Oct 2006	SH	0.102	0.003	7
25 Jun 2011	NH	0.124	0.008	7	19 Oct 2006	SH	0.104	0.001	6
26 Sep 2011	NH	0.133	0.008	7	11 Dec 2006	SH	0.101	0.002	4
					8 May 2007	SH	0.107	0.002	5
					22 Nov 2007	SH	0.110	0.002	5
					12 Aug 2008	SH	0.112	0.001	6
					16 Dec 2008	SH	0.114	0.003	5
					6 Mar 2009	SH	0.114	0.004	8
					10 Dec 2010	SH	0.118	0.002	24
					16 Dec 2010	SH	0.120	0.002	79

Table S5: Northern and Southern Hemispheric Archived Air Measurements of C₈F₁₈.

Fill Date	Location	Mole Fraction	S.D.		Fill Date	Location	Mole Fraction	S.D.	
		[ppt]	[ppt]	n			[ppt]	[ppt]	n
29 Jun 1973	NH	0.000	0.000	3	26 Apr 1978	SH	0.008	0.002	3
9 Oct 1973	NH	0.000	0.000	4	7 Jul 1978	SH	0.012	0.004	3
9 Oct 1973	NH	0.000	0.000	5	6 Feb 1979	SH	0.019	0.008	3
21 Jun 1974	NH	0.000	0.000	7	23 May 1984	SH	0.013	0.002	4
1 Oct 1975	NH	0.000	0.000	3	6 Feb 1986	SH	0.016	0.004	4
4 Oct 1977	NH	0.000	0.000	3	21 Jun 1988	SH	0.019	0.002	3
10 Aug 1978	NH	0.000	0.000	4	29 Aug 1991	SH	0.030	0.003	3
10 Aug 1978	NH	0.000	0.000	3	23 Sep 1992	SH	0.032	0.004	5
15 Apr 1980	NH	0.010	0.002	3	11 Feb 1994	SH	0.036	0.003	3
6 May 1980	NH	0.000	0.000	4	8 Feb 1995	SH	0.049	0.004	2
23 Mar 1982	NH	0.000	0.000	8	23 Nov 1995	SH	0.040	0.001	3
7 May 1982	NH	0.000	0.000	5	4 Dec 1995	SH	0.045	0.003	5
10 Sep 1986	NH	0.010	0.002	4	20 Nov 1996	SH	0.052	0.003	4
29 Mar 1991	NH	0.042	0.012	3	7 Jan 1997	SH	0.050	0.005	5
18 Apr 1996	NH	0.056	0.002	2	30 May 1997	SH	0.052	0.008	4
1 Apr 1999	NH	0.071	0.003	8	15 Jul 1997	SH	0.053	0.002	7
1 Apr 1999	NH	0.071	0.002	11	25 Jun 1998	SH	0.061	0.005	5
1 Apr 1999	NH	0.070	0.000	3	13 Apr 1999	SH	0.064	0.003	5
28 Apr 2000	NH	0.076	0.002	3	1 Mar 2000	SH	0.075	0.003	6
20 Apr 2003	NH	0.081	0.002	7	14 Mar 2000	SH	0.069	0.004	5
20 Apr 2003	NH	0.091	0.005	5	26 Aug 2000	SH	0.080	0.001	3
14 Mar 2005	NH	0.084	0.003	8	15 Jan 2001	SH	0.072	0.002	4
6 Feb 2006	NH	0.085	0.002	7	27 Apr 2001	SH	0.079	0.006	4
20 Mar 2007	NH	0.086	0.002	9	19 Jul 2001	SH	0.074	0.003	5
12 Mar 2008	NH	0.085	0.001	5	4 Sep 2001	SH	0.076	0.004	3
2 Mar 2009	NH	0.088	0.002	8	20 Jun 2002	SH	0.083	0.002	6
4 Mar 2009	NH	0.085	0.000	2	17 Feb 2003	SH	0.078	0.001	5
17 Mar 2010	NH	0.086	0.002	9	3 Oct 2003	SH	0.075	0.003	5
17 Mar 2010	NH	0.090	0.004	11	22 Jan 2004	SH	0.077	0.002	6
17 Mar 2010	NH	0.088	0.006	12	1 Dec 2004	SH	0.081	0.003	18
18 Mar 2010	NH	0.092	0.004	9	10 Feb 2005	SH	0.081	0.003	5
25 Jun 2011	NH	0.090	0.002	7	28 Jun 2005	SH	0.085	0.005	18
26 Sep 2011	NH	0.091	0.003	6	10 Feb 2006	SH	0.087	0.007	15
					4 Oct 2006	SH	0.079	0.002	5
					19 Oct 2006	SH	0.086	0.002	6
					11 Dec 2006	SH	0.083	0.002	4
					8 May 2007	SH	0.083	0.005	5
					22 Nov 2007	SH	0.088	0.002	5
					12 Aug 2008	SH	0.091	0.005	6
					16 Dec 2008	SH	0.085	0.002	5
					6 Mar 2009	SH	0.088	0.004	7
					10 Dec 2010	SH	0.085	0.003	23
					16 Dec 2010	SH	0.089	0.003	84