

Ground-based observations in support to the Venus Express mission

Date	UT	Telescope /Instr.	Measurement goals	Data quality	Contact	VEX Orbit	Relevant VEX Instrument 'ON'	Pericenter pass UT
Apr 14	02.0-04.0	IRTF Texas	Mid-IR spectra	good	D. Crisp	358	VMC, VIRTIS, SPICAV	06:20
Apr 15	02.0-04.0	IRTF Texas	Mid-IR spectra	good	D. Crisp	359	VMC, VIRTIS, SPICAV	06:19
Apr 21-22	21.2-02.5	JCMT-15m	SO, SO2 meso.	very good	B. Sandor	366	VMC, VIRTIS, SPICAV	06:14
Apr 22	20.6-21.5	JCMT-15m	Temp/CO 80-110 km	good	T. Clancy	366	VMC, VIRTIS, SPICAV	06:14
Apr 22-23	21.8-02.2	JCMT-15m	SO, SO2 meso.	good	B. Sandor	367	VMC,	06:13

							VIRTIS, SPICAV	
April 28	21.6-22.5	JCMT-15m	Temp/CO 80-110 km	good	T. Clancy	373	VMC, VIRTIS, SPICAV	06:08
Apr 28-29	22.7-2.3	JCMT-15m	HDO meso.	good	B. Sandor	373	VMC, VIRTIS, SPICAV	06:08
Apr 29-30	21.2-00.6	JCMT-15m	SO, SO2 meso.	very good	B. Sandor	374	VMC, VIRTIS, SPICAV	06:08
Apr 30	00.9-04.0	JCMT-15m	ClO meso.	good	B. Sandor	374	VMC, VIRTIS, SPICAV	06:08
May 19	?	IRTF- HIPWAC	OCS above clouds	unknown	K. Fast	393- 394	VMC, VIRTIS, SPICAV	06:37
May 22	?	IRTF- HIPWAC	OCS above clouds	unknown	K. Fast	396- 397	VMC, VIRTIS, SPICAV	06:38
May 23	?	IRTF- HIPWAC	OCS above clouds	unknown	K. Fast	397- 398	VMC, VIRTIS, SPICAV	06:38
May 24	22.5-23.3	VLT-UVES	Winds 70, 78 km	unknown	D. Luz	399	VMC, SPICAV	06:39
May 25	~7.0-7.1	KeckHIRES	O 5577 nm	good	T. Slanger	399	ASPERA, MAG, VERA	06:39
May 26	4 - 7	IRTF Cshell	HCl above cloud	good	Iwagami N	400	VMC, SPICAV	06:39

May 26	~7.0-7.1	KeckHIRES	O 5577 nm	unknown	T. Slanger	400	ASPERA, MAG, VERA SPICAV a few minutes later	06:39
May 27	4 - 7	IRTF Cshell	HCl,CO above cloud	good	Iwagami N	401	VMC, SPICAV	06:40
May 27	~7.0-7.1	KeckHIRES	O 5577 nm	unknown	T. Slanger	401	ASPERA, MAG, VERA SPICAV a few minutes later	06:40
May 28	4 - 7	IRTF Cshell	HCl,HF above cloud+ O2 1.27 mic	good	Iwagami N	402	VMC, SPICAV	06:40
May 28	~7.0-7.1	KeckHIRES	O 5577 nm	unknown	T. Slanger	402	ASPERA, MAG SPICAV a few minutes later	06:40
May 28	20.3-20.7	OHP/Sophie	Upper cloud winds	good	T.Widemann	403	-	06:41
May 28	~19-21	OHP/Emilie	Winds at 65km	good	J.L.Bertaux	403	-	06:41
May 28- 29	22:50- 0:25	McMath- Pierce	Wind at 100-120 km	good	G. Sonnabend M. Sornig	403	-	06:41
May 29	4 - 7	IRTF Cshell	HCl,CO,HF	good	Iwagami N	403	VMC, SPICAV	06:41
May 29	~7.0-7.1	KeckHIRES	O 5577 nm	unknown	T. Slanger	403	SPICAV	06:41
May 29	18.6-20.5	OHP/Sophie	Upper cloud winds	good	T.Widemann	404	-	06:41

May 29	~19-21	OHP/Emilie	Winds at 65km	good	J.L.Bertaux	404	-	06:41
May 29-30	20:30-2:43	McMath-Pierce	Wind at 100-120 km	good	G. Sonnabend M. Sornig	404	-	06:41
May 30	4 - 7	IRTF Cshell	HCl,CO,HF	good	Iwagami N	404	VMC, SPICAV, VERA	06:41
May 30	~7.0-7.1	KeckHIRES	O 5577 nm	unknown	T. Slanger	404	ASPERA, MAG, VERA	06:41
May 30	18.2-20.3	OHP/Sophie	Upper cloud winds	excellent	T.Widemann	405	-	06:41
May 30	~19-21	OHP/Emilie	Winds at 65km	good	J.L.Bertaux	405	-	06:41
May 30-31	18:20-2:24	McMath-Pierce	Wind at 100-120 km	good	G. Sonnabend M. Sornig	405	-	06:41
May 31	3.0-8.5	Nobeyama	Mm cont. (50 km)	poor	H. Sagawa	405	VMC, VERA, SPICAV	06:41
May 31	4 - 7	IRTF Cshell	HCl,CO,HF +O2 airg	good	Iwagami N	405	VMC, VERA, SPICAV	06:41
May 31	14.1.-19.5	IRAM-30m	Winds 95-105 km	good	E. Lellouch	406	-	06:42
May 31	~19-21	OHP/Emilie	Winds at 65km	good	J.L.Bertaux	406	-	06:42
May 31- June 1	18:30-2:55	McMath-Pierce	Wind at 100-120 km	good	G. Sonnabend M. Sornig	406	-	06:42
June 1	4 - 7	IRTF Cshell	HCl,CO,HF	good	Iwagami N	406	VMC, VERA	06:42
June 1	5-9.5	Nobeyama	Mm cont. + winds	good	H. Sagawa	406	VMC, VERA, SPICAV	06:42
June 1	13.9-20.1	IRAM-30m	Winds 95-105 km	good	E. Lellouch	407	-	06:42
June 1	~19-21	OHP/Emilie	Winds at 65km	good	J.L.Bertaux	407	-	06:42

June 1-2	19.0-4.0	McMath-Pierce	Wind at 100-120 km	part. bad weather	G. Sonnabend M. Sornig	407	-	06:42
June 2	2.8-9.5	Nobeyama	Mm cont. + winds	good	H. Sagawa	407	VMC, SPICAV	06:42
June 2	16.7-19.9	IRAM-30m	Winds 95-105 km	good	E. Lellouch	408	VMC starts at 20 UT	06:43
June 2	~19-21	OHP/Emilie	Winds at 65km	good	J.L.Bertaux	408	VMC starts at 20 UT	06:43
June 2	21.0-23.0	JCMT-15m	Temp/CO 80-110 km	very good	T. Clancy	408	VMC	06:43
June 2-3	23.1-3.2	JCMT-15m	SO, SO2 meso.	very good	B. Sandor	408	VMC SPICAV	06:43
June 3	~3	APO 3.5m	O 5577nm	unknown	T. Slanger	408	SPICAV	06:43
June 3	~7	IRTF/	O2 1.27 mic	good	T. Slanger	408	VMC, VERA	06 :43
June 3	2.6-9.6	Nobeyama	Mm cont. + winds	average	H. Sagawa	408	VMC, SPICAV, VERA	06:43
June 3	~19-21	OHP/Emilie	Winds at 65km	good	J.L.Bertaux	409	VMC	06:43
June 3	21.3-23.5	JCMT-15m	Temp/CO/winds	very good	T. Clancy	409	VMC	06:43
June 3-4	17:45- 3:14	McMath-Pierce	Wind at 100-120 km	good	G. Sonnabend M. Sornig	409	VMC	06:43
June 4	1.5-8.5	Nobeyama	Mm cont. + winds	poor	H. Sagawa	409	VMC, SPICAV	06:43
June 4	2.1-5.0	JCMT-15m	SO, SO2 meso.	fair	B. Sandor	409	VMC, SPICAV	06:43
June 4	~7	IRTF/	O2 1.27 mic	?	T. Slanger	409	VMC, SPICAV	06:43

June 4	~19-21	OHP/Emilie	Winds at 65km	good	J.L.Bertaux	410	VMC	06:44
June 4-5	17:37-2:18	McMath-Pierce	Wind at 100-120 km	good	G. Sonnabend M. Sornig	410	VMC	06:44
June 4	22.7-23.3	VLT-UVES	Winds 70, 78 km	unknown	D. Luz	410	VMC	06:44
June 5	~7	IRTF/	O2 1.27 mic	?	T. Slanger	410	VIRTIS, SPICAV observed slightly before	06:44
June 5	~7.0-7.1	KeckHIRES	O 5577 nm	unknown	T. Slanger	410	VIRTIS, ASPERA, MAG SPICAV observed slightly before	06:44
June 5	~19-21	OHP/Emilie	Winds at 65km	good	J.L.Bertaux	411	VMC	06:44
June 5	22.7-23.5	VLT-UVES	Winds 110 km	unknown	D. Luz	411	VMC	06:44
June 5-6	22.7-02.1	JCMT-15m	HDO meso.	fair	B. Sandor	411	VMC	06:44
June 6	3.5-6.2	JCMT-15m	Temp/CO/winds	very good	T. Clancy	411	VMC, SPICAV	06:44
June 6	~3	APO 3.5m	O 5577nm	unknown	T. Slanger	411	VMC, ASPERA, MAG	06:44
June 6	~7	IRTF/	O2 1.27 mic	?	T. Slanger	411	VIRTIS	06:44
June 6	~19-21	OHP/Emilie	Winds at 65km	good	J.L.Bertaux	412	VMC	06:44
June 6	22.7-23.4	VLT-UVES	Winds 110 km	unknown	D. Luz	412	VMC	06:44

June 7	~3	APO 3.5m	O 5577nm	unknown	T. Slanger	412	VMC, MAG, ASPERA	06:44
June 7	~7	IRTF/	O2 1.27 mic	?	T. Slanger	412	VMC, VERA	06:44
June 7	22.7-23.5	VLT-UVES	Winds 110 km	unknown	D. Luz	413	-	06:45
June 8	18.5-24	SMT	Winds 95-105 km	reasonable	P. Hartogh	414	-	06:45
June 9	18.5-24	SMT	Winds 95-105 km	reasonable	P. Hartogh	415	-	06:46
June 9-10	21.3-01.2	JCMT-15m	SO, SO2 meso.	good	B. Sandor	415	-	06:46
June 10	02.6-06.2	JCMT-15m	HDO meso.	good	B. Sandor	415	-	06:46
June 10	18.5-24	SMT	Winds 95-105 km	reasonable	P. Hartogh	416	-	06:46
Jun 10-11	22.0-0.6	JCMT-15m	Temp/CO/winds	good	T. Clancy	416	-	06:46
June 13	4-7	IRTF/SPEX	Lower atm. comp.	average	E. Marcq	418	VMC, VERA	06:47
June 13	18:0-21:0	TBL/Narval	O red , thermosphere	mean	J. Lilensten	419	-	06:47
June 14	4-7	IRTF/SPEX	Lower atm. comp.	poor	E. Marcq	419	SPICAV	06:47
June 14	18.5-24	SMT	Winds 95-105 km	reasonable	P. Hartogh	420	-	06:48
June 15	4-7	IRTF/SPEX	Lower atm. comp.	poor	E. Marcq	420	VERA	06:48
June 15	18.5-24	SMT	Winds 95-105 km	reasonable	P. Hartogh	421	-	06:48
June 16	4-7	IRTF/SPEX	Lower atm. comp.	good	E. Marcq	421	VMC, SPICAV	06:48
June 19	18:0-21:0	TBL/Narval	O red , thermosphere	good	J. Lilensten	425	-	06:50
June 26	18:0-21:0	TBL/Narval	O red , thermosphere	good	J. Lilensten	432	-	06:53
June 30	7:50-8:36	AAT/IRIS2	O2 airglow, low atm	Part.cloud	J. Bailey	435	VMC,	06:54

							SPICAV	
July 1	6.03-8:41	AAT/IRIS2	O2 airglow, low atm	good	J. Bailey	436	VMC, VIRTIS, SPICAV	06:54
July 1	2.1-3.5	CFHT/ ESPaDOnS	Winds 65-75 km	good	T. Widemann	436	VMC, VIRTIS, SPICAV	06:54
July 2	1.8-4.5	CFHT/ESP.	Winds 65-75 km	good	T. Widemann	437	VMC, VIRTIS, SPICAV	06:55
July 2	6.05-8:47	AAT/IRIS2	O2 airglow, low atm	Part.cloud	J. Bailey	437	VMC, VIRTIS, SPICAV	06:55
July 3	1.9-5.8	CFHT/ESP.	Winds 65-75 km	excellent	T. Widemann	438	VMC, VIRTIS, SPICAV	06:55
July 3	6.55-8:00	AAT/IRIS2	O2 airglow, low atm	Part.cloud	J. Bailey	438	VMC, VIRTIS, SPICAV	06:55
July 4	6.07-8:49	AAT/IRIS2	O2 airglow, low atm	good	J. Bailey	439	VMC, SPICAV	06:56
July 8	0-4:30	JCMT-15m	Temp/CO/winds	very good	T. Clancy			
July 12	2:00- 5:45	IRTFMIRSI	Cloud top temp	poor	K. Mitsuyama	447	VMC, SPICAV	06:59
July 13	2:00- 5:45	IRTFMIRSI	Cloud top temp	good	K. Mitsuyama	447	VMC, SPICAV	06:59
July 13-14	21-05	IRTF Cshell	O2 airglow		S. Ohtsuki	449	VMC, VIRTIS,	07:00

							SPICAV	
July 14-15	21-05	IRTF Cshell	O2 airglow		S. Ohtsuki	450	VMC, VIRTIS, SPICAV	07:00
July 15	2:30-5:30	JCMT-15m	Temp/CO/winds	Good-fair	T. Clancy			
July 15	0:50-2:30	JCMT-15m	SO, SO2	good-fair	B. Sandor			
July 15-16	21:30-5:00	JCMT-15m	SO, SO2	fair-poor	B. Sandor			
July 15-16	21-05	IRTF Cshell	O2 airglow		S. Ohtsuki	451	VMC, VIRTIS, SPICAV	07:01
July 20-26	07:20-08:20	AAT/IRIS2	O2 airglow, low atm		J. Bailey	455-461	Nothing on orbit 455 Other orbits: VMC, VIRTIS, SPICAM	07:02 to 06:31
July 21-31	????	IRTF			E. Young			
Aug 11	18:30-23:30	JCMT-15m	Temp?CO/winds	Very good	T. Clancy			
Aug 11-12	23:30-01:00	JCMT-15m	SO, SO2	Very good	B. Sandor			
Aug 12	01:00-02:50	JCMT-15m	HDO	Very good	B. Sandor			
Aug 12	18:20-22:00	JCMT-15m	Temp/CO/winds	Very good	T. Clancy			

Aug 12-13	22:40-00:45	JCMT-15m	SO, SO2	excellent	B. Sandor			
Aug 13	00:50-02:50	JCMT-15m	HDO	Very good	B. Sandor			
Aug 17-18	18:20-2:50	JCMT15m	Temp/CO/winds	Good-very good	T. Clancy			
Aug 18	18:25-21:40	JCMT-15m	Temp/CO/winds	Good	T. Clancy			
Aug 18-19	22:00-02:00	JCMT-15m	SO, SO2	Good-very good	B. Sandor			
Aug 19	17:45-20:50	JCMT-15m	SO, SO2	Very good	B. Sandor			
Aug 19	21:00-23:10	JCMT-15m	HDO	Very good	B.Sandor			
Aug 19-20	23:15-2:00	JCMT-15m	Temp/CO/winds	Very good	T. Clancy			
Aug.22	8-16	IRAM 30m	winds meso	poor	E. Lellouch	489-491	-	04:02 to 03:51
Aug.23	8-16	IRAM 30m	winds meso	Very good	E. Lellouch	489-491	-	04:02 to 03:51
Aug.24	8-16	IRAM 30m	winds meso	Fair/poor	E. Lellouch	489-491	-	04:02 to 03:51
Aug 25	18:30-23:40	JCMT-15m	SO, SO2	poor	B. Sandor	492	VMC, VIRTIS, SPICAV	03:46
Aug 26-27	17:45-01:50	JCMT-15m	SO, SO2	fair	B. Sandor	493	VMC, VIRTIS, SPICAV	03:40
Sept 6	16-19	IRTF/SPEX	0.8-2.5 mic, night	good	E. Young	504	VMC,	02:42

							VIRTIS	
Sept 7	16-19	IRTF/SPEX	0.8-2.5 mic, night	good	E. Young	505	VMC, VIRTIS	02:36
Sept 8	16-19	IRTF/SPEX	0.8-2.5 mic, night	good	E. Young	506	VMC, VIRTIS	02:31
Sept 9	16-19	IRTF/SPEX	0.8-2.5 mic, night	good	E. Young	507	VMC, VIRTIS, SPICAV	02:26
Sept 10	16-19	IRTF/SPEX	0.8-2.5 mic, night	good	E. Young	508	VMC, VIRTIS, SPICAV	02:20
Sept 11	16-19	IRTF/SPEX	0.8-2.5 mic, night	good	E. Young	509	VMC, VIRTIS, SPICAV	02:15
Sept 12	16-19	IRTF/SPEX	0.8-2.5 mic, night	good	E. Young	510	VMC, VIRTIS, SPICAV	02:10
Sept 13	16-19	IRTF/SPEX	0.8-2.5 mic, night	good	E. Young	511	VMC, VIRTIS, SPICAV	02:14
Sept 14	16-19	IRTF/SPEX	0.8-2.5 mic, night	good	E. Young	512	VMC, VIRTIS, SPICAV	1:59
Sept 16	16-19	IRTF/SPEX	0.8-2.5 mic, night	good	E. Young	514	VMC, VIRTIS, SPICAV	1:48
Sept 20	12-14	IRAM 30m	winds meso	poor	E. Lellouch	518	VMC, VIRTIS, SPICAV	01:27

Sept 29-30	17-20	CFHT	Winds	To do	T. Widemann	527-528	VMC VIRTIS	01:29
Oct 8-11	14-16	IRTF Cshell	Airglow	To do	T. Slanger	536-539	VMC VIRTIS	01:32
Oct 23-25	???	Subaru/COMICS	Cloud top vertical structure	To do	K. Mitsuyama			
Oct 21-24	16-22	IRTF/HIPW AC	Winds	To do	M. Sorning	548-551	VMC SPICAV	
Nov 12-17?	5-9?	OHP/Sophie	Upper cloud winds	To do	T. Widemann	570-575	-	01:40-01:47