国立極地研究所における オーロラデータアーカイブの現状と将来

門倉昭[1,2]

1. 極域環境データサイエンスセンター、ROIS-DS
2. 国立極地研究所・宙空圏研究グループ

極地研におけるオーロラデータアーカイブの現状

	観測点	観測項目	観測期間
南極域	昭和基地	①全天カメラ ②ﾌｫﾄﾒｰﾀ(固定、掃天) ③地磁気(3成分、絶対観測) ④ULF3成分 ⑤VLF自然電波 ⑤ﾘｵﾒｰﾀ ⑥ｲﾒｰｼﾞﾝｸﾞﾘｵﾒｰﾀ	1959-
	みずほ基地	①オーロラTVカメラ ②地磁気3成分 ③ULF3成分 ④VLF自然電波 ⑤ﾘｵﾒｰﾀ ⑤天頂ﾌｫﾄﾒｰﾀ	1976-1979, 1982-1985
	あすか基地	①全天カメラ ②ﾌｫﾄﾒｰﾀ(掃天) ③地磁気3成分 ④ﾘｵﾒｰﾀ	1987-1991
	ドームふじ基地	①全天カメラ ②地磁気3成分	2003
	マラジョージナヤ基地	①地磁気3成分 ②ULF2成分 ③VLF自然電波 ④ﾘｵﾒｰﾀ	1980-1990
	中山基地	①全天カメラ ②掃天ﾌｫﾄﾒｰﾀ ③ｲﾒｰｼﾞﾝｸﾞﾘｵﾒｰﾀ	1995-
	南極点基地	①全天カメラ(ASI-1,2, Watec, WMI)	1997-
	マクマード基地	①全天カメラ(WMI)	2015-
	マイトリ基地	①全天カメラ(WMI、Watec)	2020-
	ﾌﾟﾘﾝｾｽｴﾘｻﾞﾍﾞｽ基地	①全天カメラ ②地磁気3成分 ③GNSS/TEC)	2020-
	無人観測点	①地磁気3成分(8点) ②全天カメラ(1点) ③GNSS/TEC(1点)	2003-
	マリオン島	①ﾘｵﾒｰﾀ	2018-
北極域	アイスランド3点	①全天カメラ ②ﾌｫﾄﾒｰﾀ(固定、掃天) ③地磁気3成分 ④ULF3成分 ⑤VLF自然電波 ⑤ﾘｵﾒｰﾀ ⑥ｲﾒｰｼﾞﾝｸﾞﾘｵﾒｰﾀ	1983-
	トロムソ	①全天カメラ ②狭視野カメラ ③ﾋﾞｰｺﾝ電波受信 ④GPSｼﾝﾁﾚｰｼｮﾝ	2003-
	ﾛﾝｸﾞｲﾔﾋﾞﾝ	①全天カメラ ②狭視野カメラ ③スペクトログラフ	2000-
	北欧多点	①全天カメラ(Skibotn、Sodankylä、Kilpisjärvi、Kiruna、Tjautjas)	2016-
	グリーンランド	①全天カメラ(Sondrestrom, Godhavn) ②狭視野カメラ	1995-1997

昭和基地　全天オーロラ観測　履歴

Year	JARE	モニタリング観測	研究観測
1959-1961	03-05	フィルム式白黒	
1966-1980	07-21	フィルム式白黒	
1981-1983	22-24	フィルム式白黒	SIT-TV白黒
1984-1985	25-26	フィルム式白黒	SIT-TV白黒, 単色CCD3式
1986-1988	27-29	フィルム式白黒	SIT-TV白黒
1989	30	フィルム式白黒	SIT-TV白黒、単色CCD-TV
1990	31	フィルム式白黒	SIT-TV白黒、単色CCD-TV2式
1991	32	フィルム式白黒	SIT-TV白黒、単色CCD-TV1式
1992-1996	33-37	フィルム式白黒	SIT-TV白黒
1997	38	フィルム式白黒、SIT-TV白黒	
1998	39	フィルム式白黒（4月8日まで）、SIT-TV白黒 デジタルCCD白黒（新規）	単色デジタルCCD (5577/6300/4278切替)
1999-2002	40-43	デジタルCCD白黒, CCD-TV白黒	単色デジタルCCD (5577/6300/4278切替)
2003	44	デジタルCCD白黒	CCD-TV白黒、単色デジタルCCD(5577/6300/4278切替)
2004-2006	45-47	単色デジタルCCD(5577/6300/4278切替)	CCD-TV白黒、単色デジタルCCD（4278)、ｶﾗｰﾃﾞｼﾞﾀﾙｶﾒﾗ
2007-2010	48-51	単色デジタルCCD(5577/6300/4278切替)	CCD-TV白黒、単色デジタルCCD（4278)、ｶﾗｰﾃﾞｼﾞﾀﾙｶﾒﾗ Watec白黒、単色デジタルCCD2式（4861/Na:589.76）
2011-2016	52-57	単色デジタルCCD4式（4278/5577/4850/4805) ｶﾗｰﾃﾞｼﾞﾀﾙｶﾒﾗ	CCD-TV白黒、Watec白黒
2017	58	単色デジタルCCD4式（4278/5577/4850/4805) ｶﾗｰﾃﾞｼﾞﾀﾙｶﾒﾗ、CCD-TV白黒(5月31日迄)、Watec白黒	高速イメージャ、ﾌﾟﾛﾄﾝｵｰﾛﾗｽﾍﾟｸﾄﾛｸﾞﾗﾌ
2018-2022	59-63	単色デジタルCCD4式（4278/5577/4850/4805) ｶﾗｰﾃﾞｼﾞﾀﾙｶﾒﾗ、Watec白黒	高速イメージャ、ﾌﾟﾛﾄﾝｵｰﾛﾗｽﾍﾟｸﾄﾛｸﾞﾗﾌ
2023	64	単色デジタルCCD4式（4278/5577/4850/4805) ｶﾗｰﾃﾞｼﾞﾀﾙｶﾒﾗ、Watec白黒 単色Watec4式 (4278/5577/4860/4800)	高速イメージャ、 単色極冠ｲﾒｰｼﾞｬ4式(3914/6300/5577/6700)
2024-2028	65-69	ｶﾗｰﾃﾞｼﾞﾀﾙｶﾒﾗ、Watec白黒 単色Watec4式 (4278/5577/4860/4800)	高速イメージャ、 単色極冠ｲﾒｰｼﾞｬ4式(3914/6300/5577/6700)

FAIR：Findable, Accessible： データへのアクセス

極地研HP ➡「研究・共同利用」➡「データベース」➡「オーロラデータセンター」

https://polaris.nipr.ac.jp/~aurora/indexJ.html

全天カメラ(白黒)データ

観測点	観測項目	データ形式と取得期間
昭和基地	全天カメラ(白黒)	①フィルム記録: 1959 −1997 ②アナログビデオ記録: 1976 − 2017 ③デジタル画像: 1998 − now

旧オーロラ世界資料センターデータカタログ




IGY（国際地球観測年、1957-1958）以来の世界各地からのマイクロフィルムデータ

オーロラ全天カメラマイクロフィルムデーター覧 (1957-1975/1976-1998)

地磁気3成分ノーマルランマグネットグラム一覧 (1957-1975/1976-1995) （南半球データのみ利用可）

全天カメラ(白黒)フィルムデータ

STATION NAME	YEAR 1957	58	59	60	61	62	63	64	65	66	67	68	69
ABISKO	1	1	1										
AKLAVIK	1	1											
ALDAN		1											
ALERT	1	1	1										
ARCTIC ICE FLOW	1	1											
ARCTIC 1	1	1	1										
ARCTIC 2	1	1	1										
ARCTIC ICE FLOW	1	1											
ARKHANGELSK		1	1										
ARLIS 3								1					
BAKER LAKE	1	1	1										
BAR-1								1	1				
BASE GENERAL		1											
BETTLES	1	1	1					1	1				
BIRD	1	1											
BYRD	1	1	1					1	1				
CAMDEN	1	1											
CAMPBELL ISLAND	1	1											
CAPE CHELYUSKIN	1	1	1										
CAPE SCHMIDT	1	1	1										
CAPE SHALAUROVO		1											
CAPE WELLEN		1	1										
CAPE ZHELANIA	1	1											
CHETIROKHSTOLBOVOI		1	1										
CHOTEAU MONTANA	1	1	1	1									
COLLEGE	1	1	1	1	1			1	1	1			
DAVIS	1	1											
DELAWARE	1	1	1										
DIXON	1	1	1										
EGILSSTADIR									1	1	1	1	1
EIGHTS								1					
ELLSWORTH	1	1	1	1	1								
ENNADAI LAKE	1	1											
FAREWELL	1	1											
FARGO	1	1	1					1	1	1			
FLIN FLON	1	1											
FORT CHURCHILL	1	1	1										
FORT YUKON		1	1					1	1				
FRITZ PEAK	1	1											
GODHAVN	1	1	1										
GONZALES VIDELA	1	1											
HALLETT	1	1											
HALLEY BAY	1	1											
HANOVER		1	1						1	1			
HEALY		1											
HEISS ISLAND	1	1											
HOBART	1	1											
INVERCARGILL	1	1											
ITHACA	1	1	1	1									
JULIANEHAAB	1	1											
KARASJOK													1
KAZACHYE	1	1	1										
KIRUNA	1	1	1	1			1	1	1	1	1		

STATION NAME	YEAR 1957	58	59	60	61	62	63	64	65	66	67	68	69
KNOB LAKE		1	1	1	1			1	1				
KOTZEBUE	1	1						1	1	1			
KRISTINEBERG	1	1	1										
LEIRVOGUR	1	1	1	1			1	1	1	1	1	1	1
LITTLE AMERICA	1	1											
LOPARSKAYA(MURMANSK)	1	1										1	1
LYCKSELE	1	1	1					1	1	1			
MACQUARIE ISLAND		1											
MAWSON	1	1											
MEANOOK	1	1	1										
MELBOURNE	1	1											
MIRNY	1	1			1				1				
MUOSTAKH		1											
MURCHISON BAY	1	1	1										
NARYAN MAR		1	1										
NEW ALESUND												1	
NORD	1	1	1										
NORTHWAY		1	1										
OASIS	1												
O'DAY	1	1											
OLENEK	1	1	1										
OTTAWA	1	1	1										
POCATELLO	1	1	1										
POINT BARROW	1	1	1	1					1	1			
PREOBRAZHENIE IS.		1											
PRESQUE IS.									1				
PULLMAN	1	1	1						1	1	1		
PYRAMIDA	1	1	1										
RAPID CITY	1	1											
REDMOND	1	1	1										
REGINA	1	1											
RESOLUTE BAY	1	1	1										
ROSCHINO		1	1										
SALEKHARD		1	1										
SASKATOON	1	1	1										
SCOTT BASE	1	1											
SHINGLETON	1	1	1										
SIKTIVKER		1	1										
SKIBOTN													
SOUTH POLE	1	1	1										
SYOWA			1	1									
T3(FLETCHER'S ICE)	1	1	1										
THULE/QANAQ	1	1	1	1									
TIXIE BAY	1	1	1										
TROMSO	1	1	1										
UEDINENIE IS.	1	1	1										
URANIUM CITY	1	1											
VERMILLION	1	1	1										
VICTORIA	1	1	1										
VOSTOK		1											
WIESE IS.	1	1	1										
WILKES	1	1	1										

STATION NAME	1957	58	59	60
WILLIAMS BAY	1	1	1	
WRANGEL IS.	1	1	1	
YAKUTSK	1	1	1	
YELLOWKNIFE	1	1	1	

STATION NAME	YEAR 1976	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98
ASUKA												1		1	1								
BJORNOYA		1																					
CASEY	1	1	1																				
DAVIS	1					1			1	1		1											
HALLEY BAY	1	1	1			1	1	1	1	1	1	1	1										
MACQUARIE ISLAND	1	1	1			1	1	1	1	1	1	1											
MAWSON	1	1	1				1	1	1	1	1	1											
MIRNY	1		1	1	1	1			1	1				1	1								
MOLODEZHNAYA	1									1													
NEW ALESUND	1	1	1	1	1	1	1	1	1	1	1	1	1										
NOVOLAZAREVSKAYA	1	1																					
SKIBOTN	1	1	1	1	1	1	1																
SOUTH POLE	1	1	1	1	1	1		1	1	1	1	1		1			1						
SYOWA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
TROMSO	1	1	1	1	1	1	1	1	1	1	1	1	1										
VOSTOK	1	1	1	1	1	1	1					1		1									

オーロラ世界資料センター
WDC-C2 for Aurora
時代の収集データ

- 1981年、ICSU WDCパネルの勧告の下、極地研に設置。歴代管理者:鮎川、小野、門倉(1994年度より)。
- IGY(1957-1958)期間の両極域の99観測点のデータを所蔵
- 昭和基地のデータは、1970年より連続的に所有
- アイスランドLeirvogurのデータも1973年までであり、過去の共役点オーロラ研究も可能
- 1976-1990年の間は、南極域のデータが充実

World Data Center (WDC) to World Data System (WDS) (from 2009)

WORLD DATA CENTERS, 1995

WDC-A	Atmospheric Trace Gases	Oak Ridge	TN	U.S.A.
WDC-A	Glaciology	Boulder	CO	U.S.A.
WDC-A	Human Interactions in the Environment	Saginaw	MI	U.S.A.
WDC-A	Marine Geology & Geophysics	Boulder	CO	U.S.A.
WDC-A	Meteorology	Asheville	NC	U.S.A.
WDC-A	Oceanography	Silver Spring	MD	U.S.A.
WDC-A	Paleoclimatology	Boulder	CO	U.S.A.
WDC-A	Remotely Sensed Land Data	Sioux Falls	SD	U.S.A.
WDC-A	Rockets & Satellites	Greenbelt	MD	U.S.A.
WDC-A	Rotation of the Earth	Washington	DC	U.S.A.
WDC-A	Seismology	Denver	CO	U.S.A.
WDC-A	Solar-Terrestrial Physics	Boulder	CO	U.S.A.
WDC-A	Solid Earth Geophysics	Boulder	CO	U.S.A.
WDC-B	Marine Geology & Geophysics	Gelendzhik	Russia	
WDC-B	Meteorology	Obninsk	Russia	
WDC-B	Oceanography	Obninsk	Russia	
WDC-B	Rockets & Satellites	Obninsk	Russia	
WDC-B	Rotation of the Earth	Obninsk	Russia	
WDC-B	Solar Terrestrial Physics	Moscow	Russia	
WDC-B	Solid Earth Physics	Moscow	Russia	
WDC-C	Earth Tides	Brussels	Belgium	
WDC-C1	Geomagnetism	Copenhagen	Denmark	
WDC-C1	Geomagnetism	Edinburgh	U.K.	
WDC-C	Glaciology	Cambridge	U.K.	
WDC-C	Recent Crustal Movements	Prague	Czech Republic	
WDC-C	Soils	Wageningen	Netherlands	
WDC-C	Solar Activity	Meudon	France	
WDC-C1	Solar-Terrestrial Physics	Chilton	U.K.	
WDC-C	Sunspot Index	Brussels	Belgium	
WDC-C2	Airglow	Tokyo	Japan	
WDC-C2	Aurora	Tokyo	Japan	
WDC-C2	Cosmic Rays	Mito	Japan	
WDC-C2	Geomagnetism	Bombay	India	
WDC-C2	Geomagnetism	Kyoto	Japan	
WDC-C2	Ionosphere	Tokyo	Japan	
WDC-C2	Nuclear Radiation	Tokyo	Japan	
WDC-C2	Solar Radio Emissions	Nobeyama	Japan	
WDC-C2	Solar-Terrestrial Activity	Sagamihara	Japan	
WDC-D	Astronomy	Beijing	China	
WDC-D	Geology	Beijing	China	
WDC-D	Geophysics	Beijing	China	
WDC-D	Glaciology & Geocryology	Lanzhou	China	
WDC-D	Meteorology	Beijing	China	
WDC-D	Oceanography	Tianjin	China	
WDC-D	Renewable Resources & Environment	Beijing	China	
WDC-D	Seismology	Beijing	China	
WDC-D	Space Sciences	Beijing	China	

WDS加入国内関連データ機関 (2021)

WDC for Geomagnetism, Kyoto
京都大学大学院理学研究科附属・地磁気世界資料解析センター

World Data Center for Geomagnetism, Kyoto

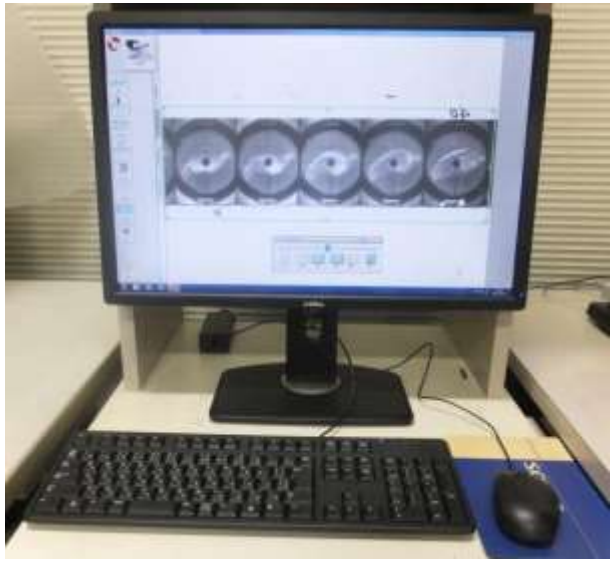
operated by
Data Analysis Center for Geomagnetism and Space Magnetism
Graduate School of Science, Kyoto University
Kitashirakawa-Oiwake Cho, Sakyo-ku
Kyoto 606-8502, JAPAN

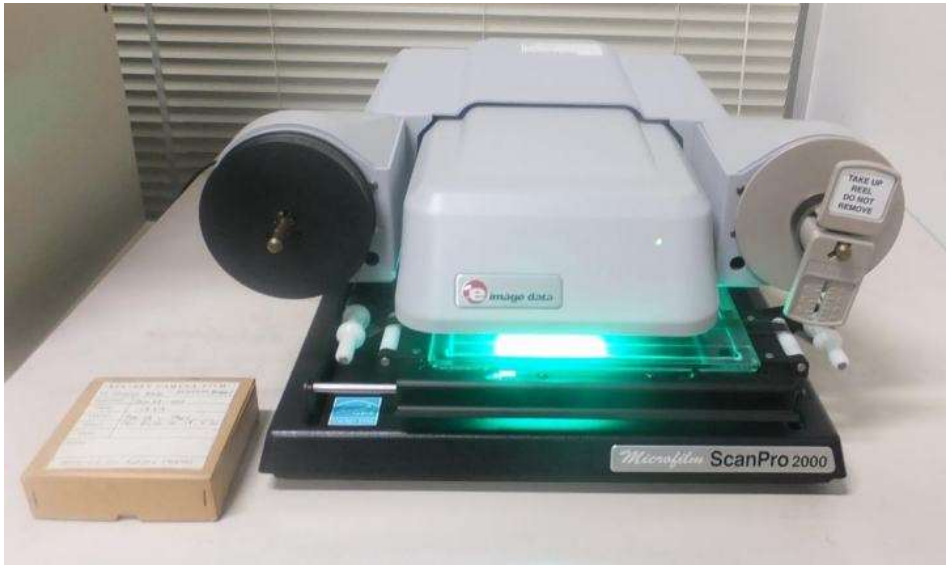
WDC for Ionosphere and Space Weather
電離圏・宇宙天気世界資料センター（情報通信研究機構）

Research Institute for Sustainable Humanosphere, Kyoto University
京都大学生存圏研究所

全天カメラ（白黒）フィルムデータ

- 35 mm/16 mm、100ftマイクロフィルムロールの形で所蔵
- スキャンしてデジタル化可能
- フィルムの劣化が進んでいる
- 安価なデジタル化方法を検討：リボンスキャニング＆VFR（Virtual Film Rewinder）（1巻を1つの画像として取り込む方法＆閲覧ソフト：2,000円／1巻）



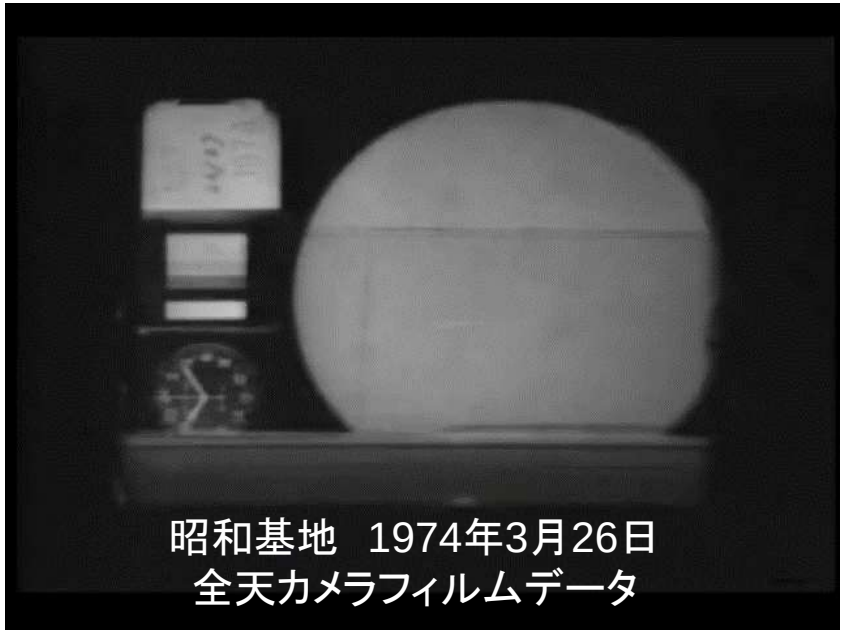


Topページ ➡「昭和基地におけるオーロラ観測データ」

https://polaris.nipr.ac.jp/~aurora/optical.obs/SyowaAuroraObsTop.html

フィルム、ビデオ、デジタル画像 ➡ Quick Look動画の作成 for イベント検索

Auroral Quick Look movies observed by the All-sky camera										
year	00	01	02	03	04	05	06	07	08	09
1950										
1960										
1970	A	A	A	A	A	A	A	A	A	A
1980	A	A	A	A	A	A	A	A	A	A
1990	A	A	A	A	A	A	A	A	A	A
2000	A	A	A	A S	A					A
2010	A	A	A	A	A	A	A	A	A	A
2020	A	A	A							



昭和基地　1974年3月26日
全天カメラフィルムデータ

昭和基地　1991年3月22日
全天SIT-TVビデオ タイムラプスデータ

Topページ ➡「昭和基地におけるオーロラ観測データ」

https://polaris.nipr.ac.jp/~aurora/optical.obs/SyowaAuroraObsTop.html

Auroral Observation at Syowa Station, Antarctica

Information

- Syowa Aurora Now !
- Auroral Monitoring Observation at Syowa: 2021-2022, 2023
- Observation Summary

Instruments for Long-term Monitoring Observation

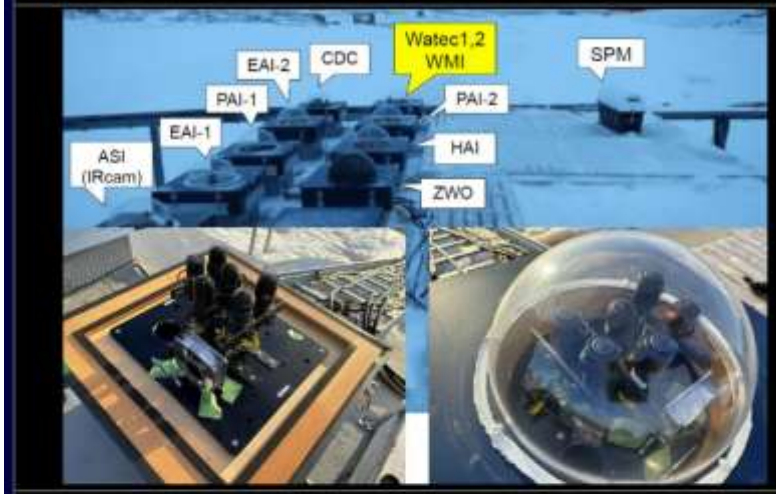
Name	Note	Data
CDC	Colar Digital Camera (2005-2020)	All-sky image
new CDC	Colar Digital Camera (2021-) (QL_page)	All-sky image
EAI-1,2 PAI-1,2	Electron Auroral Imager 1 (427.8 nm) (QL page)	All-sky image
	Electron Auroral Imager 2 (557.7 nm) (QL_page)	All-sky image
	Proton Auroral Imager 1 (485.0 nm) (QL_page)	All-sky image
	Proton Auroral Imager 2 (656.3 nm) (QL_page)	All-sky image
Watec	Watec B&W sky TV camera	All-sky image
WMI	Watec Monochromatic Imager (2023-) (4 imagers: 427.8/ 557.7/ 486.0/ 480.0 nm) real time / data at 1 hour before (summary / keogram / movie)	All-sky image
SPM	8ch Meridian Scanning Photometer (2009-) (482.5/ 483.5/ 484.5/ 485.5/ 486.5/ 487.5/ 670.5/ 844.6 nm)	Emission intensity

Instruments for Research Project Observation

Name	Note	Data
HAI	High-speed Auroral Imager (B&W, EMCCD camera) keogram / archive	All-sky image
PAI	Polar cap Auroral Imager (Monochromatic, CMOS camera) (391.4/ 557.7/ 630.0/ 670.0 nm)	All-sky image

メタデータ

Watec Monochromatic Imager (WMI) at Syowa Station

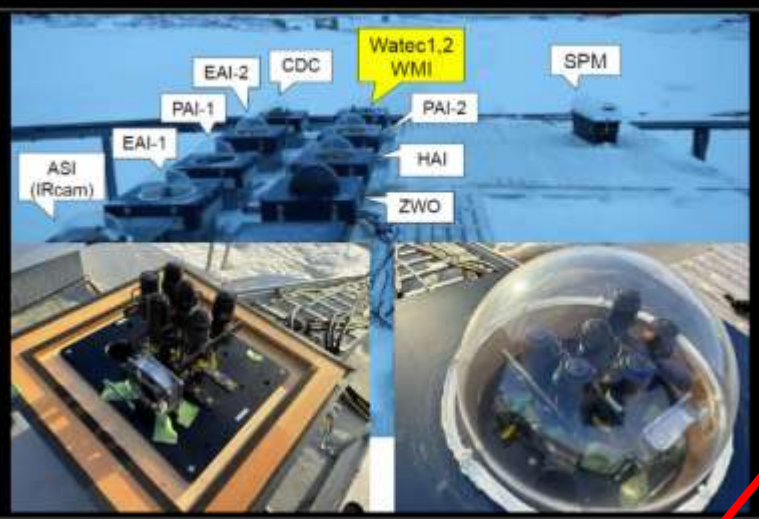


Instrument name	Watec Monochromatic Imager (WMI)
Observation site	Syowa Station, Antarctica
Observation location	Geographic latitude (deg): -69.00, longitude (deg): 39.58
Observation start	25 February, 2023
Instrument details	Camera: 4 sets of Watec WAT-910HX/RC Lens: ch1, ch4: Fujinon YV2.2X1.4A, ch2, ch3: Spacecom,TV1634DC Filter: ch1: Edumund Optics #65-137, ch2: #88-011, ch3: #65-146, ch4: #65-145 Center wave length: ch1: 430 nm, ch2: 560 nm, ch3: 486 nm, ch4: 480 nm FWHM: ch1-4: 10 nm Video encoder: AXIS Q7404
Target auroral line	ch1: 427.8nm (N2+ING), ch2: 557.7nm (OI), ch3: 486nm (Hb), ch4: 480nm (Hb-BG)
Data interval	Original: ch1: 1 sec, ch2: 1 sec, ch3: 5 sec, ch4: 5 sec Archive: ch1-4: 20 sec
Exposure time	ch1: 64 field, ch2: 32 field, ch3: 256 field, ch4: 256 field
Camera settings	GAIN: 41dB, GAMMA: 0.45, 3DNR: ON, LEVEL: 50, SETUP-LEVEL: 7.5IRE
Data type	All-sky image in JPG format
Image pixel resolution	640 (W) x 480 (H), 8 bit depth
Related WEB page	about / real time / archive / summary / keogram / 2H_keogram / movie Auroral Quick Look Viewer of NIPR ground-based network
IUGONET CDF file	all-sky data (asi/syo/yyyy/mm/dd/nipr_asi_syo_4278/4800/4860/5577) keogram data (ask/syo/yyyy/nipr_ask_syo_4278/4800/4860/5577)
Principal Investigator	Name: Akira Kadokura Affiliation: National Institute of Polar Research, Tokyo, Japan E-mail: kadokura(at) nipr.ac.jp
Reference	Polar Science, doi:10.1016/j.polar.2019.100501

メタデータ ➡ QLプロット、データへのアクセス

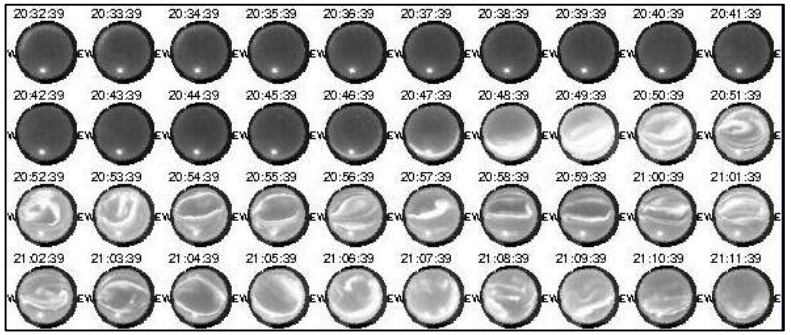
https://polaris.nipr.ac.jp/~aurora/optical.obs/Syowa_WMI_top.html

Watec Monochromatic Imager (WMI) at Syowa Station

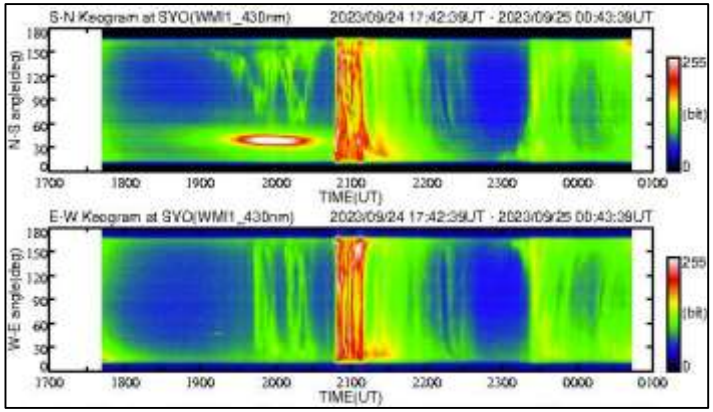


Instrument name	Watec Monochromatic Imager (WMI)
Observation site	Syowa Station, Antarctica
Observation location	Geographic latitude (deg): -69.00, longitude (deg): 39.58
Observation start	25 February, 2023
Instrument details	Camera: 4 sets of Watec WAT-910HX/RC Lens: ch1, ch4: Fujinon YV2.2X1.4A, ch2, ch3: Spacecom,TV16-4DC Filter: ch1: Edumund Optics #65-137, ch2: #88-011, ch3: #65-146, ch4: #65-145 Center wave length: ch1: 430 nm, ch2: 560 nm, ch3: 486 nm, ch4: 480 nm FWHM: ch1-4: 10 nm Video encoder: AXIS Q7404
Target auroral line	ch1: 427.8nm (N2+ING), ch2: 557.7nm (OI), ch3: 486nm (Hb), ch4: 480nm (Hb-BG)
Data interval	Original: ch1: 1 sec, ch2: 1 sec, ch3: 5 sec, ch4: 5 sec Archive: ch1-4: 20 sec
Exposure time	ch1: 64 field, ch2: 32 field, ch3: 256 field, ch4: 256 field
Camera settings	GAIN: 41dB, GAMMA: 0.45, 3DNR: ON, LEVEL: 50, SETUP-LEVEL: 7.5IRE
Data type	All-sky image in JPG format
Image pixel resolution	640 (W) x 480 (H), 8 bit depth
Related WEB page	about / real time / archive / summary / keogram / 2H_keogram / movie Auroral Quick Look Viewer of NIPR ground-based network
IUGONET CDF file	all-sky data (asi/syo/yyyy/mm/dd/nipr_asi_syo_4278/4800/4860/5577) keogram data (ask/syo/yyyy/nipr_ask_syo_4278/4800/4860/5577)
Principal Investigator	Name: Akira Kadokura Affiliation: National Institute of Polar Research, Tokyo, Japan E-mail: kadokura(at) nipr.ac.jp
Reference	Polar Science, doi:10.1016/j.polar.2019.100501

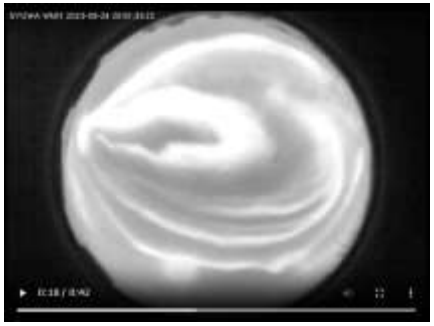
summary



keogram



movie



Top page ➡「Auroral Observation at Syowa Station」

https://polaris.nipr.ac.jp/~aurora/optical.obs/SyowaAuroraObsTop.html

Auroral Observation at Syowa Station, Antarctica

Information

- Syowa Aurora Now !
- Auroral Monitoring Observation at Syowa: 2021-2022, 2023
- Observation Summary

Instruments for Long-term Monitoring Observation

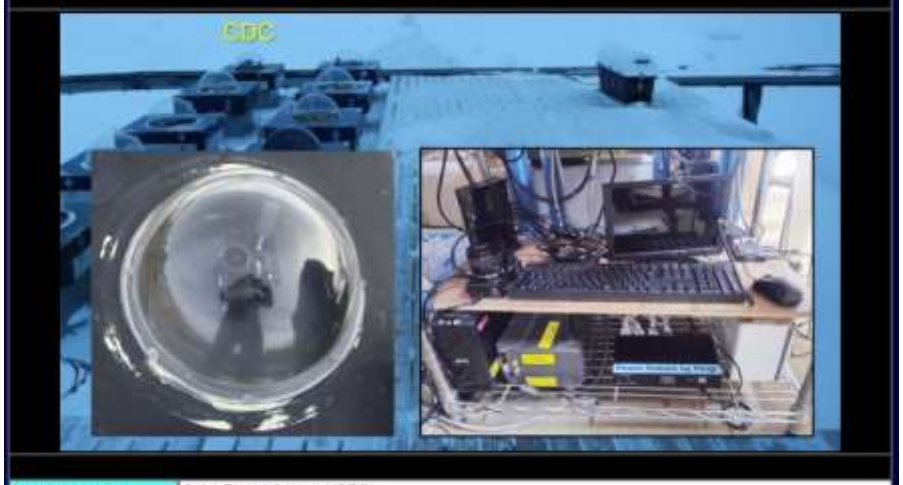
Name	Note	Data
CDC	Colar Digital Camera (2025-)	All-sky image
new CDC	Color Digital Camera (2021-) (QL_page)	All-sky image
EAI-1,2 PAI-1,2	Electron Auroral Imager 1 (427.8 nm) (QL page)	All-sky image
	Electron Auroral Imager 2 (557.7 nm) (QL_page)	All-sky image
	Proton Auroral Imager 1 (485.0 nm) (QL_page)	All-sky image
	Proton Auroral Imager 2 (480.5 nm) (QL_page)	All-sky image
Watec	Watec B&W All-sky TV camera	All-sky image
WMI	Watec Monochromatic Imager (2023-) (4 imagers: 427.8/ 557.7/ 486.0/ 480.0 nm) real time / data at 1 hour before (summary / keogram / movie)	All-sky image
SPM	8ch Meridian Scanning Photometer (2009-) (482.5/ 483.5/ 484.5/ 485.5/ 486.5/ 487.5/ 670.5/ 844.6 nm)	Emission intensity

Instruments for Research Project Observation

Name	Note	Data
HAI	High-speed Auroral Imager (B&W, EMCCD camera) keogram / archive	All-sky image
PAI	Polar cap Auroral Imager (Monochromatic, CMOS camera) (391.4/ 557.7/ 630.0/ 670.0 nm)	All-sky image

Meta data

Color Digital Camera (CDC) at Syowa Station



Instrument name	Color Digital Camera (CDC)
Observation site	Syowa Station, Antarctica
Observation location	Geographic latitude (deg): -69.00, longitude (deg): 39.58
Observation start	March, 2021
Instrument details	- Camera: Sony α6300, ILCE-6300 - Lens: Meike Fisheye 6.5mm/F2.0, MK065F20SE - Exposure: 2 sec - Interval: 10 sec - Sensitivity: ISO6400 - Image pixel size: raw: 6000x4000, Quick Look: 480x480 - Full color
Related WEB page	CDC data Quick Look WEB page About / archive / summary / keogram / keogram_color / 2H_keogram / movie
Principal Investigator	Name: Yasunobu Ogawa, Akira Kadokura Affiliation: National Institute of Polar Research, Tokyo, Japan E-mail: yogawa (at) nipr.ac.jp, kadokura (at) nipr.ac.jp

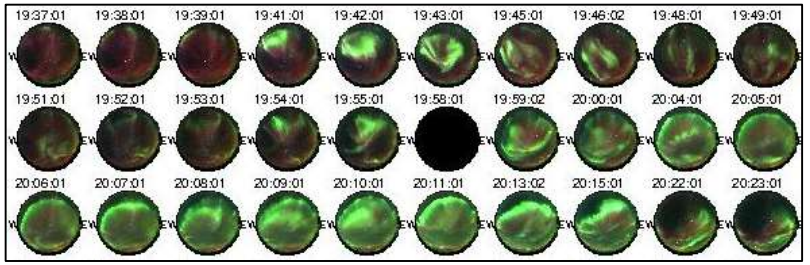
Meta data ➡ access to QL plot & data

https://polaris.nipr.ac.jp/~aurora/optical.obs/Syowa_newCDC_top.html

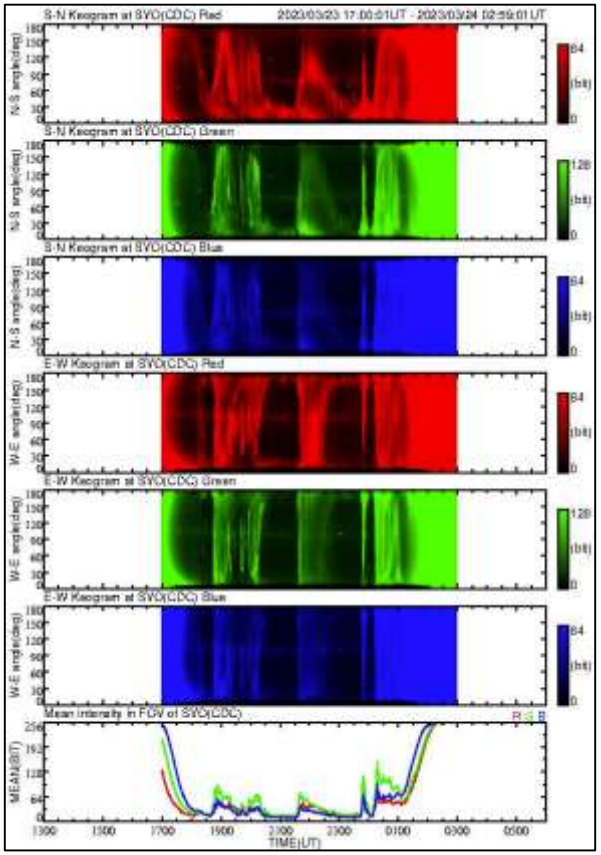
Color Digital Camera (CDC) at Syowa Station

Instrument name	Color Digital Camera (CDC)
Observation site	Syowa Station, Antarctica
Observation location	Geographic latitude (deg): -69.00, longitude (deg): 39.58
Observation start	March, 2021
Instrument details	- Camera: Sony α6300, ILCE-6300 - Lens: Meike Fisheye 6.5mm/F2.0, MK0655_20SE - Exposure: 2 sec - Interval: 10 sec - Sensitivity: ISO6400 - Image pixel size: raw: 6000x4000, Quick Look: 480x480 - Full color
Related WEB page	CDC data Quick Look WEB page About / archive / summary / keogram / keogram_color / 2H_keogram / movie
Principal Investigator	Name: Yasunobu Ogawa, Akira Kadokura Affiliation: National Institute of Polar Research, Tokyo, Japan E-mail: yogawa (at) nipr.ac.jp, kadokura (at) nipr.ac.jp

summary



keogram_color



Topページ ➡「昭和基地におけるオーロラ観測データ」

https://polaris.nipr.ac.jp/~aurora/optical.obs/SyowaAuroraObsTop.html

Auroral Observation at Syowa Station, Antarctica

Information

- Syowa Aurora Now !
- Auroral Monitoring Observation at Syowa: 2021-2022, 2023
- Observation Summary

Instruments for Long-term Monitoring Observation

Name	Note	Data
CDC	Colar Digital Camera (2005-2020)	All-sky image
new CDC	Colar Digital Camera (2021-) (QL page)	All-sky image
EAI-1,2 PAI-1,2	Electron Auroral Imager 1 (427.8 nm) (QL page)	All-sky image
	Electron Auroral Imager 2 (557.7 nm) (QL page)	All-sky image
	Proton Auroral Imager 1 (485.0 nm) (QL page)	All-sky image
	Proton Auroral Imager 2 (480.5 nm) (QL page)	All-sky image
Watec	Watec B&W All-sky TV camera	All-sky image
WMI	Watec Monochromatic Imager (2023-) (4 imagers: 427.8/ 557.7/ 486.0/ 480.0 nm) real time / data at 1 hour before (summary / keogram / movie)	All-sky image
SPM	8ch Meridian Scanning Photometer (2009-) (482.5/ 483.5/ 484.5/ 485.5/ 487.5/ 670.5/ 844.6 nm)	Emission intensity

Instruments for Research Project Observation

Name	Note	Data
HAI	High-speed Auroral Imager (B&W, EMCCD camera) keogram / archive	All-sky image
PAI	Polar cap Auroral Imager (Monochromatic, CMOS camera) (391.4/ 557.7/ 630.0/ 670.0 nm)	All-sky image

プロジェクトページへのリンク

Top page menu：「Data」➡「Syowa」, 「Iceland」, 「South Pole」

Observation at Syowa Station, Antarctica

Auroral Observation at Syowa Station

Syowa Aurora Now !

Magnetic Observation at Syowa Station

Today's Magnetogram (refreshed at every hour)

Iceland - Syowa conjugate observation for Auroral phenomena

Auroral Observations at South Pole and McMurdo Stations

Overview & Monochromatic All-Sky Imager (ASI) observation at South Pole

Watec B&W All-Sky Camera observation at South Pole

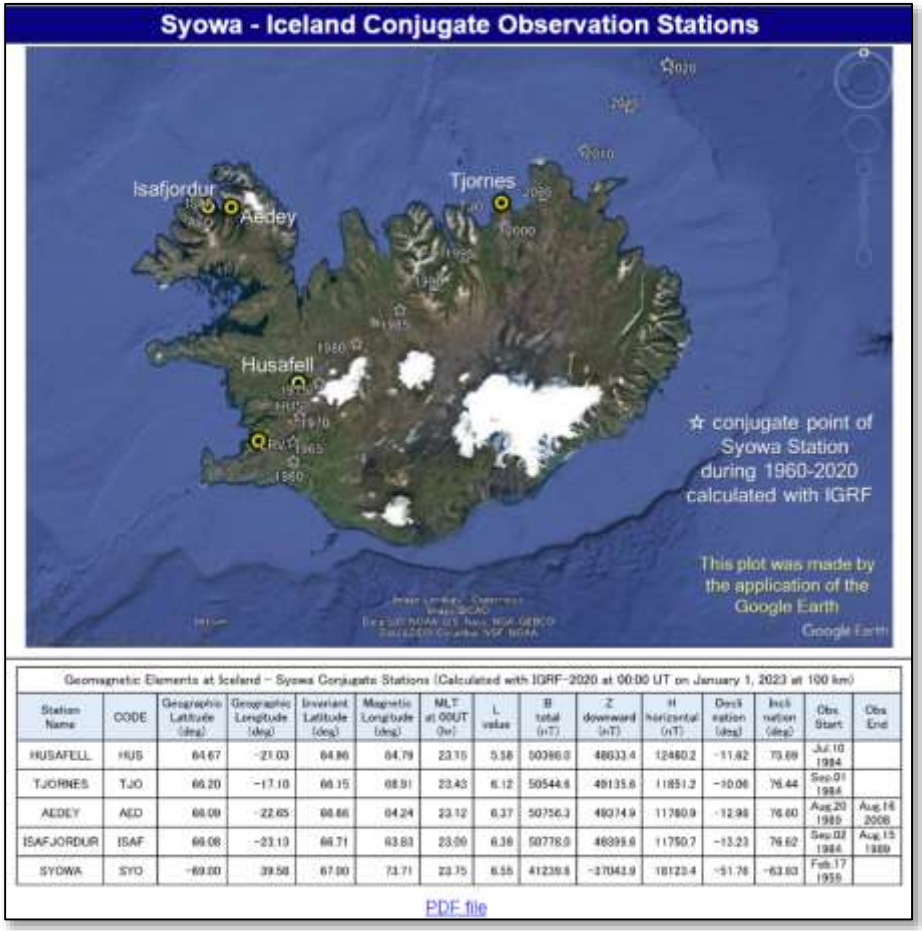
Watec Monochromatic Imager (WMI) Observation at South Pole

Watec Monochromatic Imager (WMI) Observation at McMurdo

Topページ ➡「昭和基地ーアイスランド共役点超高層モニタリング観測データ」

https://polaris.nipr.ac.jp/~aurora/uapm/ConjugateObs_index.html

「Information」➡「Site Information」



Geomagnetic Elements at Iceland – Syowa Conjugate Stations (Calculated with IGRF-2020 at 00:00 UT on January 1, 2023 at 100 km)

Station Name	CODE	Geographic Latitude (deg)	Geographic Longitude (deg)	Invariant Latitude (deg)	Magnetic Longitude (deg)	MLT at 00UT (hr)	L value	B total (nT)	Z downward (nT)	H horizontal (nT)	Declination (deg)	Inclination (deg)	Obs. Start	Obs. End
HUSAFELL	HUS	64.67	-21.03	64.86	64.79	23.15	5.58	50386.0	48633.4	12480.2	-11.82	73.69	Jul.10 1984	
TJORNES	TJO	66.20	-17.10	66.15	66.91	23.43	6.12	50544.6	49135.6	11851.2	-10.06	76.44	Sep.01 1984	
AEDEY	AED	66.09	-22.65	66.66	64.24	23.12	6.37	50756.3	49374.9	11760.9	-12.98	76.60	Aug.20 1985	Aug.16 2006
ISAFJORDUR	ISAF	66.08	-23.13	66.71	63.83	23.09	6.39	50778.0	49395.6	11750.7	-13.23	76.62	Sep.02 1984	Aug.15 1989
SYOWA	SYO	-69.00	39.58	67.00	73.71	23.75	6.55	41239.8	-37043.9	18123.4	-51.76	-63.83	Feb.17 1959	

PDF file

Topページメニュー:「データ」➡「他観測点」

Auroral Observations at other Arctic and Antarctic stations

Auroral Quicklook Viewer of NIPR ground-based network(AQVN)

Optical observation in Arctic and Antarctic stations (Tromso, Longyearbyen, ...)

Optical observations in Arctic and Antarctic stations

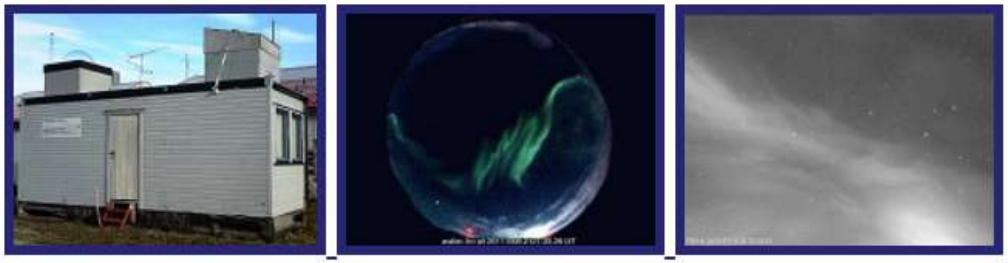
Home | RT plots | Tromsø | Longyearbyen | South pole | McMurdo | Link

Last update: 2022-8-28

National Institute of Polar Research

Polar research science database &

Space and Upper Atmospheric Sciences Group



PRE Annex at the EISCAT Tromsø site, and examples of aurora images.

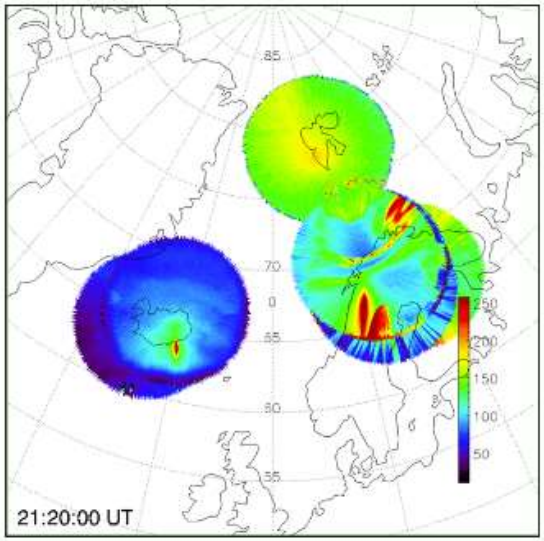
South pole station and optical hut in Arrival heights in McMurdo station.

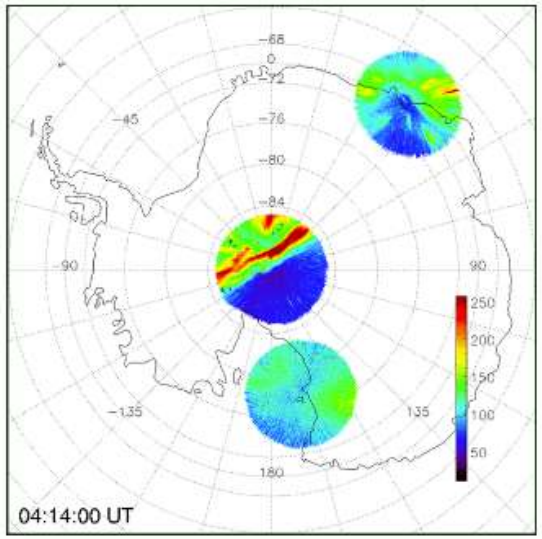
Topページメニュー:「データ」➡「他観測点」

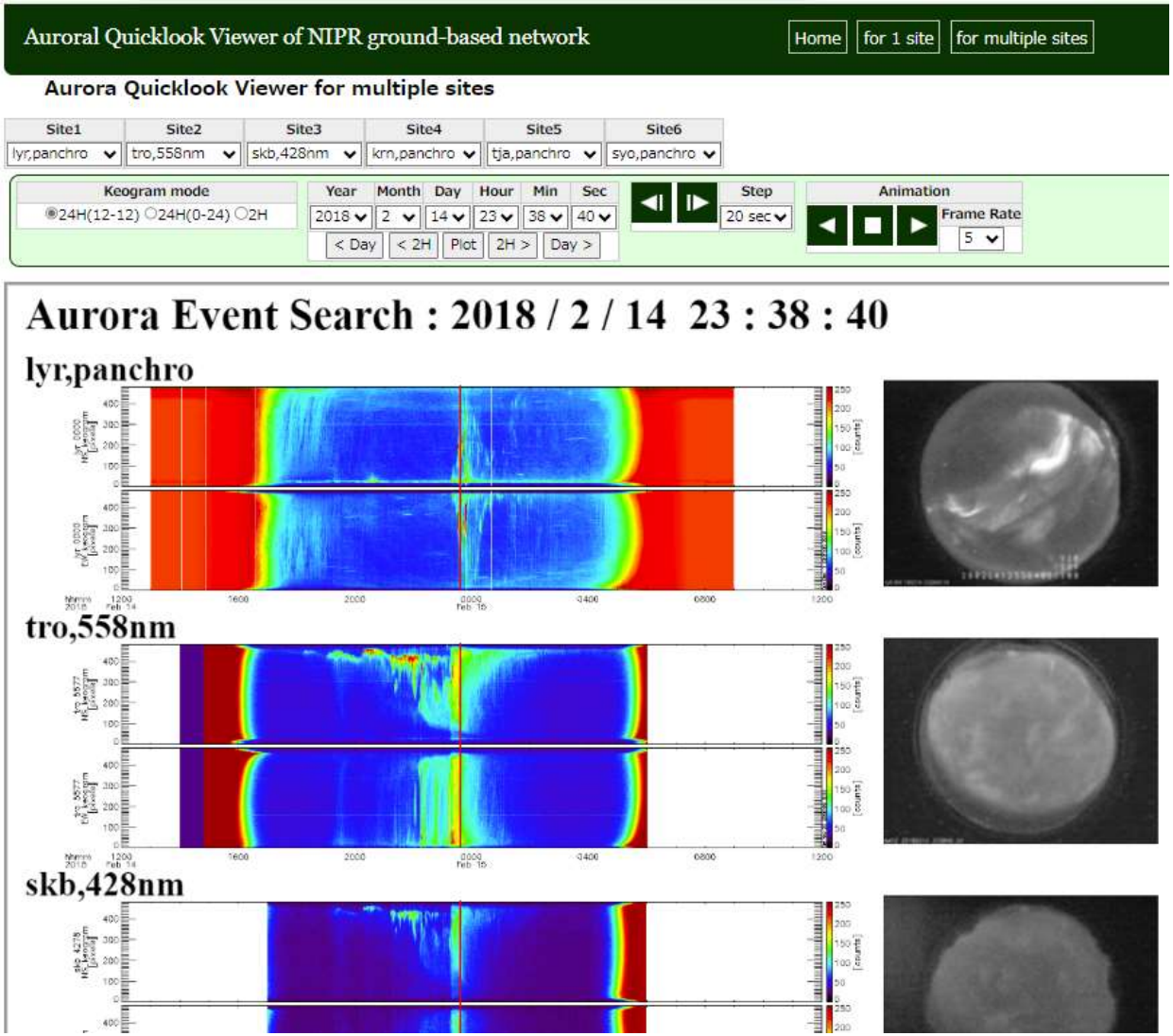
Auroral Observations at other Arctic and Antarctic stations

Auroral Quicklook Viewer of NIPR ground-based network(AQVN)

Optical observation in Arctic and Antarctic stations (Tromso, Longyearbyen, ...)







Top page munu:「Data」➡「Others」

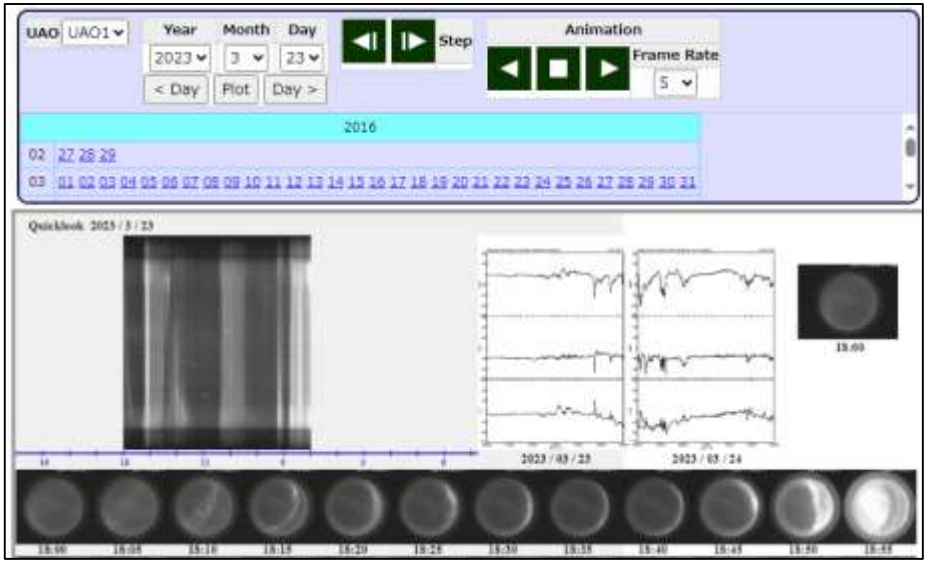
Auroral Observations at other Arctic and Antarctic stations

Auroral Quicklook Viewer of NIPR ground-based network(AQVN)

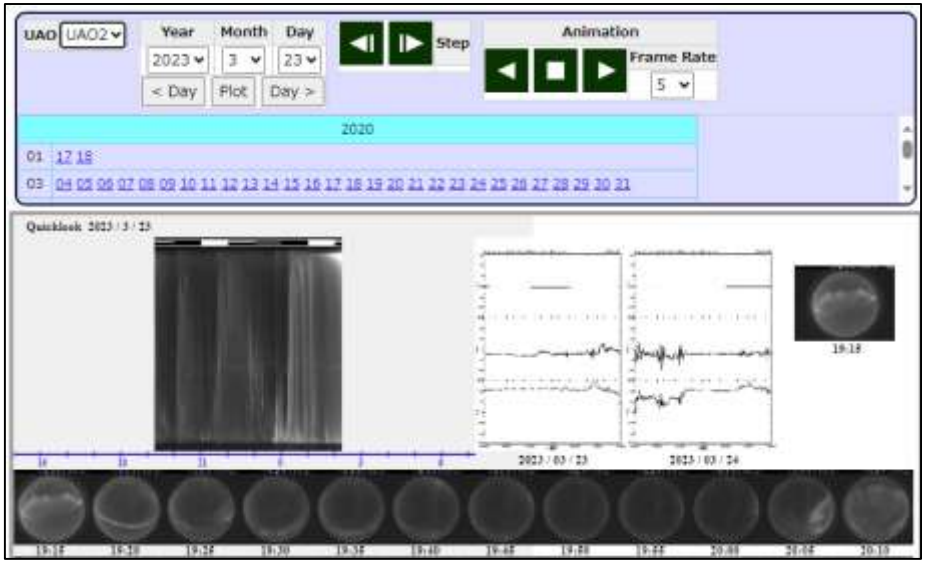
Optical observations in Arctic and Antarctic stations (Tromso, Longyearbyen, ...)

Unmanned Auroral Observation (UAO) network in Antarctica

UAO-1 data at Amundsen Bay



UAO-2 data at Princess Elisabeth station

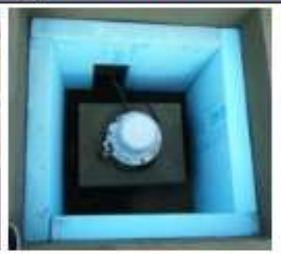


Topページ ➡「昭和基地における地磁気観測データ」

https://polaris.nipr.ac.jp/~aurora/syowa.magne/magne.main.html

Geomagnetic Observation at Syowa Station, Antarctica

Geomagnetic variation observation by fluxgate magnetometer



Magnetometer	Type: SHIMADZU MB-162, 3-axis fluxgate magnetometer Range: +/-2,500 nT, Resolution: 0.1 nT H: local magnetic northward, D: magnetic eastward, Z: downward
Data logger	1. ATLAS: 16bit A/D for full range of +/-10 V, 20Hz sampling 2. NTDL logger: 24 bit A/D for full range of +/-10 V, 20Hz sampling

Geomagnetic variation data

Today's Magnetogram (refreshed at every hour)

極地研におけるオーロラデータアーカイブの現状
IUGONET/SPEDASへの登録（Watec白黒・単色、高速ｲﾒｰｼﾞｬなど）

	観測点	観測項目	観測期間
南極域	昭和基地	①全天カメラ　②ﾌｫﾄﾒｰﾀ（固定、掃天）　③地磁気（3成分、絶対観測） ④ULF3成分　⑤VLF自然電波　⑤ﾘｵﾒｰﾀ　⑥ｲﾒｰｼﾞﾝｸﾞﾘｵﾒｰﾀ	1959–
	みずほ基地	①オーロラTVカメラ　②地磁気3成分 ③ULF3成分　④VLF自然電波 ⑤ﾘｵﾒｰﾀ　⑤天頂ﾌｫﾄﾒｰﾀ	1976–1979, 1982–1985
	あすか基地	①全天カメラ　②ﾌｫﾄﾒｰﾀ（掃天）　③地磁気3成分　④ﾘｵﾒｰﾀ	1987–1991
	ドームふじ基地	①全天カメラ　②地磁気3成分	2003
	マラジョージナヤ基地	①地磁気3成分　②ULF2成分　③VLF自然電波　④ﾘｵﾒｰﾀ	1980–1990
	中山基地	①全天カメラ　②掃天ﾌｫﾄﾒｰﾀ　③ｲﾒｰｼﾞﾝｸﾞﾘｵﾒｰﾀ	1995–
	南極点基地	①全天カメラ（ASI–1,2, Watec, WMI）	1997–
	マクマード基地	①全天カメラ（WMI）	2015–
	マイトリ基地	①全天カメラ（WMI、Watec）	2020–
	ﾌﾟﾘﾝｾｽｴﾘｻﾞﾍﾞｽ基地	①全天カメラ　②地磁気3成分　③GNSS/TEC）	2020–
	無人観測点	①地磁気3成分（8点）　②全天カメラ（1点）　③GNSS/TEC（1点）	2003–
	マリオン島	①ﾘｵﾒｰﾀ	2018–
北極域	アイスランド3点	①全天カメラ　②ﾌｫﾄﾒｰﾀ（固定、掃天）　③地磁気3成分 ④ULF3成分　⑤VLF自然電波　⑤ﾘｵﾒｰﾀ　⑥ｲﾒｰｼﾞﾝｸﾞﾘｵﾒｰﾀ	1983–
	トロムソ	①全天カメラ　②狭視野カメラ　③ﾋﾞｰｺﾝ電波受信　④GPSｼﾝﾁﾚｰｼｮﾝ	2003–
	ﾛﾝｸﾞｲﾔﾋﾞﾝ	①全天カメラ　②狭視野カメラ　③スペクトログラフ	2000–
	北欧多点	①全天カメラ（Skibotn、Sodankylä、Kilpisjärvi、Kiruna、Tjautjas）	2016–
	グリーンランド	①全天カメラ（Sondrestrom, Godhavn）　②狭視野カメラ	1995–1997