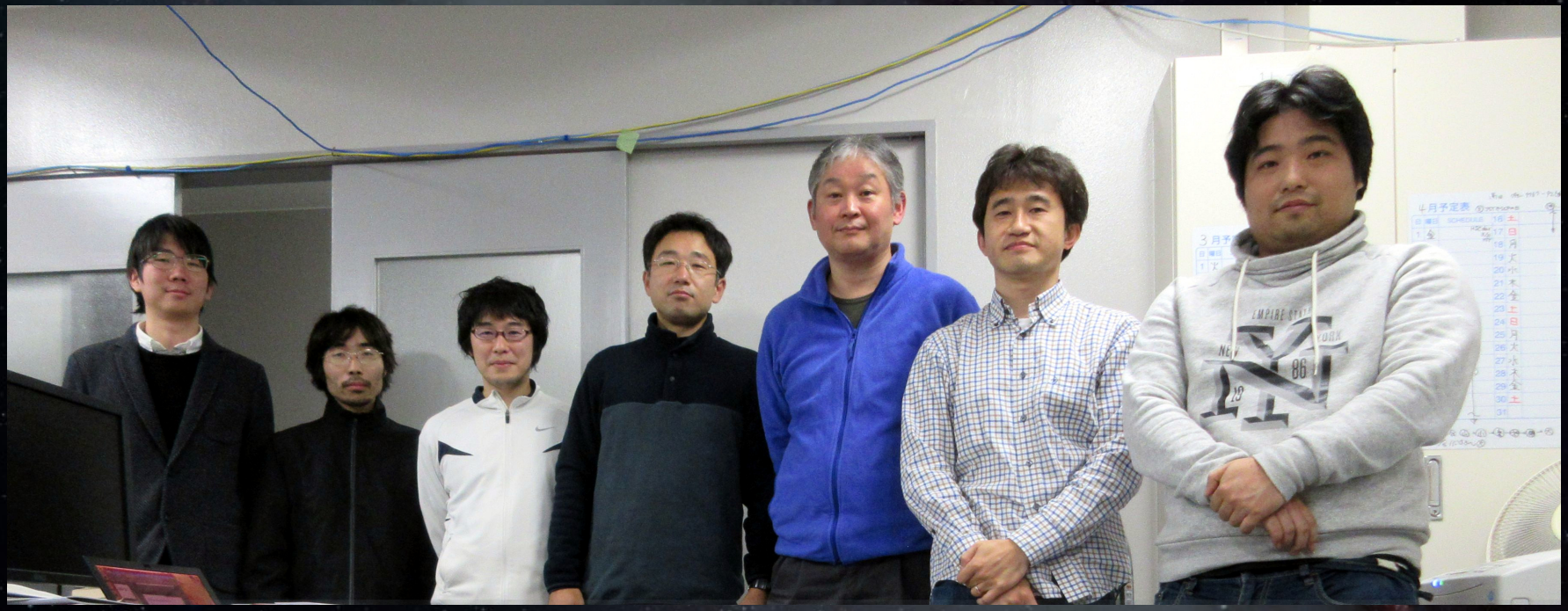
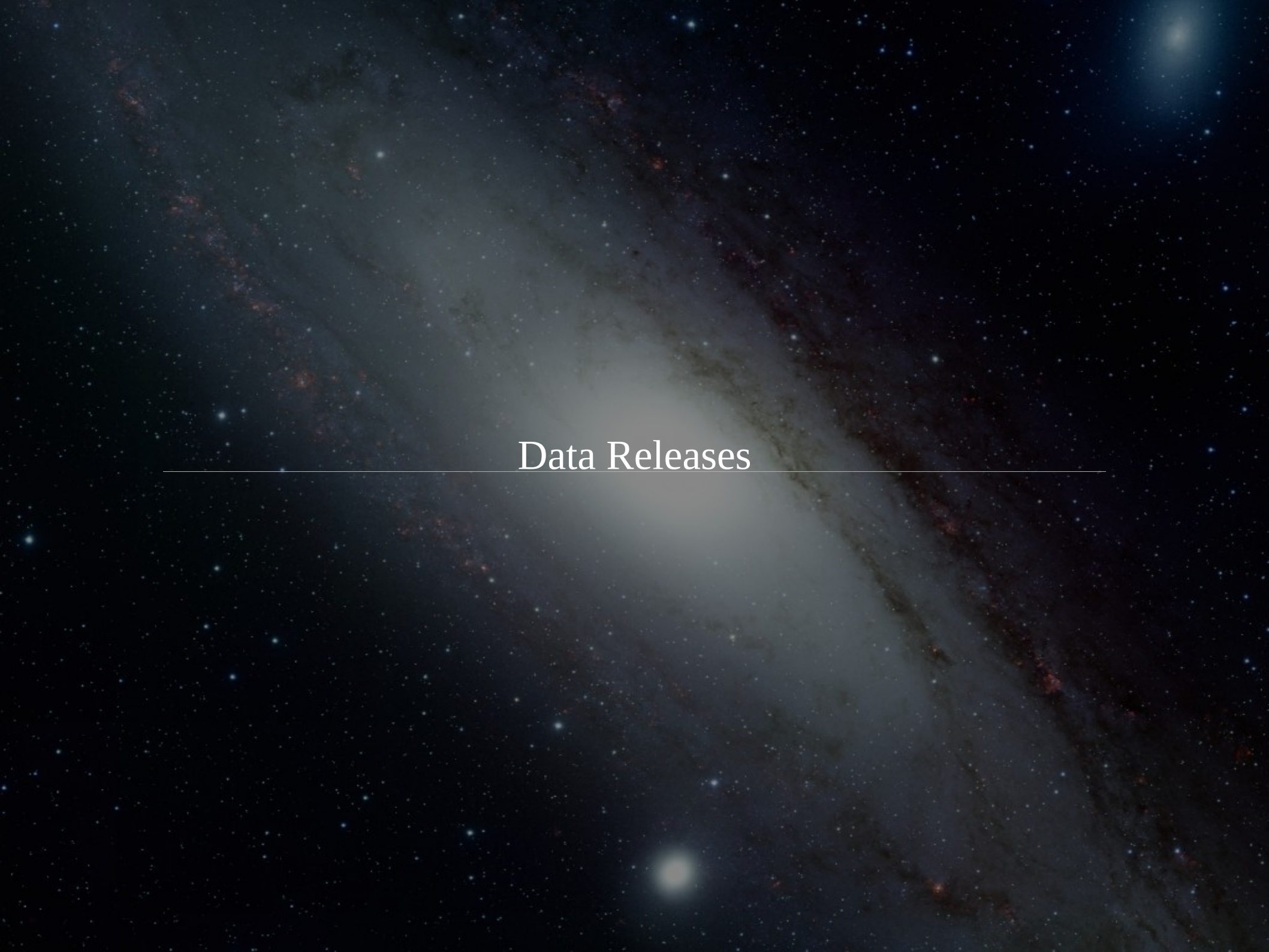
SSP data release, HSC Log, and Open-use Data Analysis

Hisanori Furusawa, Hiroyuki Ikeda, Michitaro Koike,
Sogo Mineo, Yukie Oishi, Yuki Okura, Tadafumi Takata,
Masayuki Tanaka, and Yoshihiko Yamada




Data Releases

The First Public Data Release of HSC-SSP

Search ...

Hyper Suprime-Cam Subaru Strategic Program

Data Release 1

We peer deep into the Universe to unveil the nature of dark matter and dark energy.

News: the second incremental data release!

We are pleased to announce the 2nd incremental data release from HSC-SSP. This release includes (1) emission-line object catalog from Hayashi et al. (2017), (2) weak-lensing simulation data from Mandelbaum et al. (2017), and (3) deep, multi-band photometric catalog from Mehta et al. (2017). In addition, two new data retrieval tools are available: PSF picker and postage-stamp retriever. The former is an online tool, where a user can upload a coordinate list and retrieve PSF models at the input positions. This will be useful for detailed analysis of object shapes. The latter is a client tool, with which a user can download postage stamps of multiple objects in color. For details, follow the links from the Data Access page.

Public Data Release 1

Welcome to the Hyper Suprime-Cam Subaru Strategic Program Data Release Site!
The first public release of HSC-SSP occurred on 28 February 2017. The release includes over 100 square degrees of deep multi-color data served through dedicated databases and user interfaces. The figures below shows the area covered in this release and the table gives an overview of the data in the three survey layers. Refer to our survey website for details of the survey design.

Publ. Astron. Soc. Japan (2014) 00(0), 1–27
doi: 10.1093/pasj/xxx000

First Data Release of the Hyper Suprime-Cam Subaru Strategic Program

Hiroaki Aihara[1], Robert Armstrong[2], Steven Bickerton[3], James Bosch[2], Jean Coupon[4], Hisanori Furusawa[5], Yusuke Hayashi[5], Hiroyuki Ikeda[5], Yukiko Kamata[5], Hiroshi Karoji[6,2], Satoshi Kawanomoto[5], Michitaro Koike[5], Yutaka Komiyama[5,7], Dustin Lang[8,9], Robert H. Lupton[2], Sogo Mineo[5], Hironao Miyatake[10,11], Satoshi Miyazaki[5,7], Tomoki Morokuma[12,11], Yoshiyuki Obuchi[5], Yukie Oishi[5], Yuki Okura[13,14], Paul A. Price[2], Tadafumi Takata[5,7], Manobu M. Tanaka[15], Masayuki Tanaka[5,*], Yoko Tanaka[16], Tomohisa Uchida[15], Fumihiro Uraguchi[5], Yousuke Utsumi[17], Shiang-Yu Wang[18], Yoshihiko Yamada[5], Hitomi Yamanoi[5], Naoki Yasuda[11], Nobuo Arimoto[16,7], Masashi Chiba[19], Francois Finet[16], Hiroki Fujimori[20], Seiji Fujimoto[21], Junko Furusawa[5], Tomotsugu Goto[22], Andy Goulding[2], James E. Gunn[2], Yuichi Harikane[21,23], Takashi Hattori[16], Masao Hayashi[5], Krzysztof G. Hełminiak[24], Ryo Higuchi[21], Chiaki Hikage[11], Paul T.P. Ho[18,25], Bau-Ching Hsieh[18], Kuiyun Huang[26], Song Huang[27,11], Masatoshi Imanishi[5,7], Ikuru Iwata[16,7], Anton T. Jaelani[19], Hung-Yu Jian[18], Nobunari Kashikawa[5,7], Nobuhiko Katayama[11], Takashi Kojima[21,23], Akira Konno[21], Shintaro Koshida[16], Alexie Leauthaud[27], C.-H. Lee[16], Lihwai Lin[18], Yen-Ting Lin[18], Rachel Mandelbaum[28], Yoshiki Matsuoka[5,29], Elinor Medezinski[2], Shoken Miyama[17,30], Rieko Momose[22], Anupreeta More[11], Surhud More[11], Shiro Mukae[21], Ryoma Murata[11,1], Hitoshi Murayama[11,31,32], Tohru Nagao[29], Fumiaki Nakata[16], Mana Niida[33], Hiroko Niikura[1,11], Atsushi J. Nishizawa[34], Masamune Oguri[35,11,1], Nobuhiro Okabe[36,17], Yoshiaki Ono[21], Masato Onodera[16], Masafusa Onoue[5,7], Masami Ouchi[21,11], Tae-Soo Pyo[16], Takatoshi Shibuya[21], Kazuhiro Shimasaku[23], Melanie Simet[37], Joshua Speagle[38,11], David N. Spergel[2,39], Michael A. Strauss[2], Yuma Sugahara[21,23], Naoshi Sugiyama[40,11], Yasushi Suto[1,35], Nao Suzuki[11], Philip J. Tait[16], Masahiro Takada[11], Tsuyoshi Terai[16], Yoshiki Toba[18], Edwin L. Turner[2,11,1], Hisakazu Uchiyama[7], Keiichi Umetsu[18], Yuji Urata[41], Tomonori Usuda[5,7], Sherry Yeh[16], Suraphong Yuma[42],

[1]Department of Physics, University of Tokyo, Tokyo 113-0033, Japan
[2]Department of Astrophysical Sciences, Princeton University, 4 Ivy Lane, Princeton, NJ 08544
[3] Orbital Insight, 100 W. Evelyn Ave. Mountain View, CA 94041
[4] Department of Astronomy, University of Geneva, ch. dÉcogia 16, 1290 Versoix, Switzerland
[5] National Astronomical Observatory of Japan, 2-21-1 Osawa, Mitaka, Tokyo 181-8588, Japan
[6] National Institutes of Natural Sciences, 4-3-13 Toranomon, Minato-ku, Tokyo, JAPAN
[7]Department of Astronomy, School of Science, Graduate University for Advanced Studies (SOKENDAI), 2-21-1, Osawa, Mitaka, Tokyo 181-8588, Japan

© 2014. Astronomical Society of Japan.

Data Release paper with 110 authors!

Incremental Data Releases

We made two incremental data releases:

June 2017:
- photo-z products for Wide
- SSP-UH COSMOS data

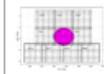
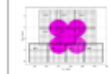
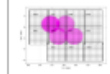
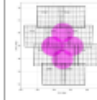
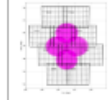
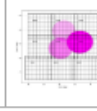
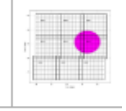
filter	Exposure time	Depth (5sigma, point source)
g	3.3h	27.8
r	1.5h	27.7
i	6.0h	27.6
z	3.5h	26.8
y	9.5h	26.2

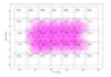
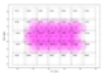
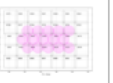
Nov 2017:
- emission line object catalog by Hayashi+
- weak-lensing simulation data by Mandelbaum+
- mutli-band SXDS data by Mehta+
- PSF picker by Mineo-kun
- Postagestam retriever by Koike-kun

Internal Data Releases

S17A release on Sep 28 including 250sqdeg of full-color full-depth area
There was no S17B release... Apologies!

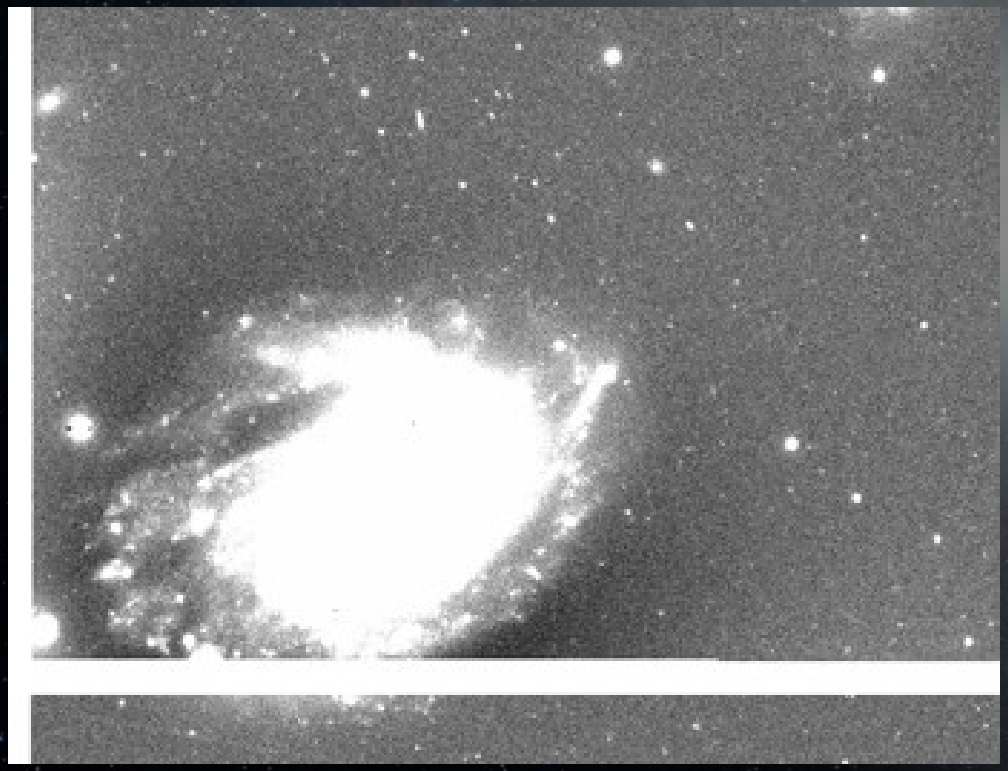
See poster Ikeda-kun's poster #7 for details.

Field Name	HSC-g	HSC-r	HSC-i	HSC-z	HSC-y	HSC-Z	NB0387	NB0816	NB0921
COSMOS									
DEEP2-3									
ELAIS-N1									
SXDS+XMM-LSS									

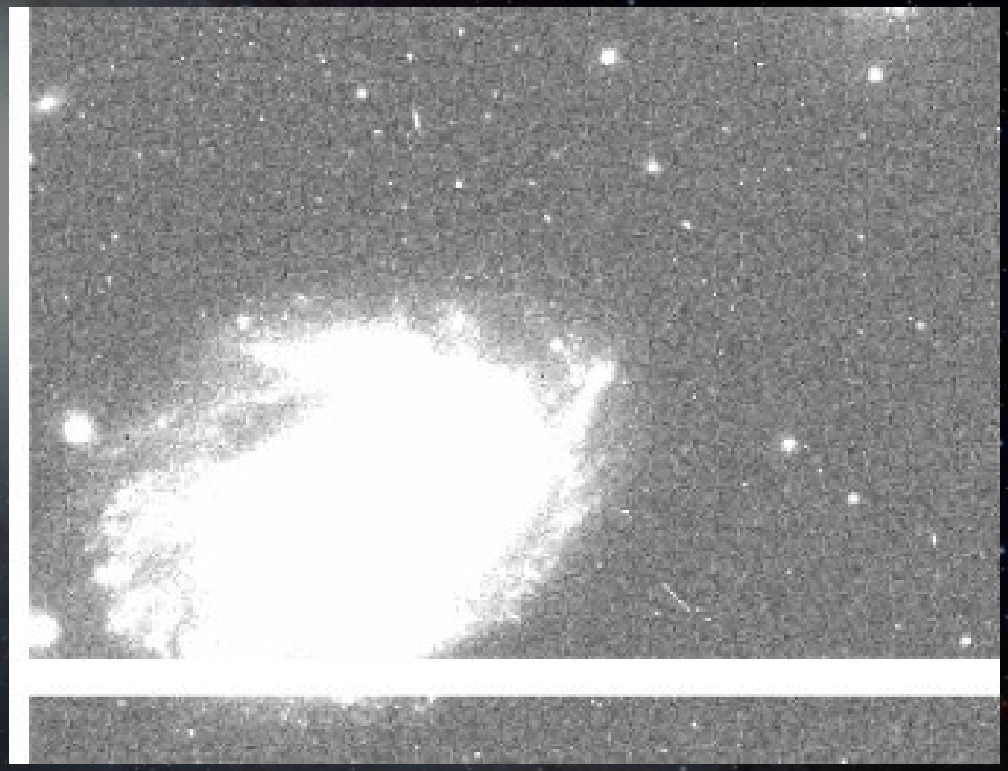
Field Name	HSC-g	HSC-r	HSC-i	HSC-z	HSC-y	HSC-Z
W01 (WIDE01H)						
W02 (XMM)						
W03 (GAMA09H)						
W04 (WIDE12H+GAMA15H)						
W05 (VVDS)						
W06 (HECTOMAP)						
W07 (AEGIS)						

Pipeline efforts #1

The ‘global sky subtraction’ algorithm works well for big galaxies.
Work done by Koike-kun and Tanaka. See Poster #16 by Mineo-kun.



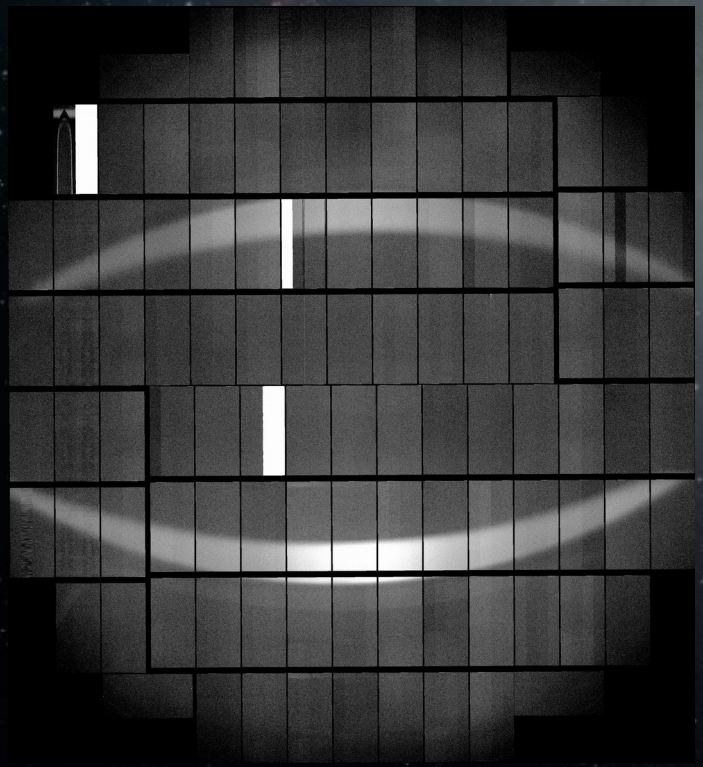
Previous version



Latest version

Pipeline efforts #2

The scattered light in the y-band can now be beautifully subtracted!
Work done by Mineo-kun, Koike-kun and Kawanomoto-san. See Poster #16.



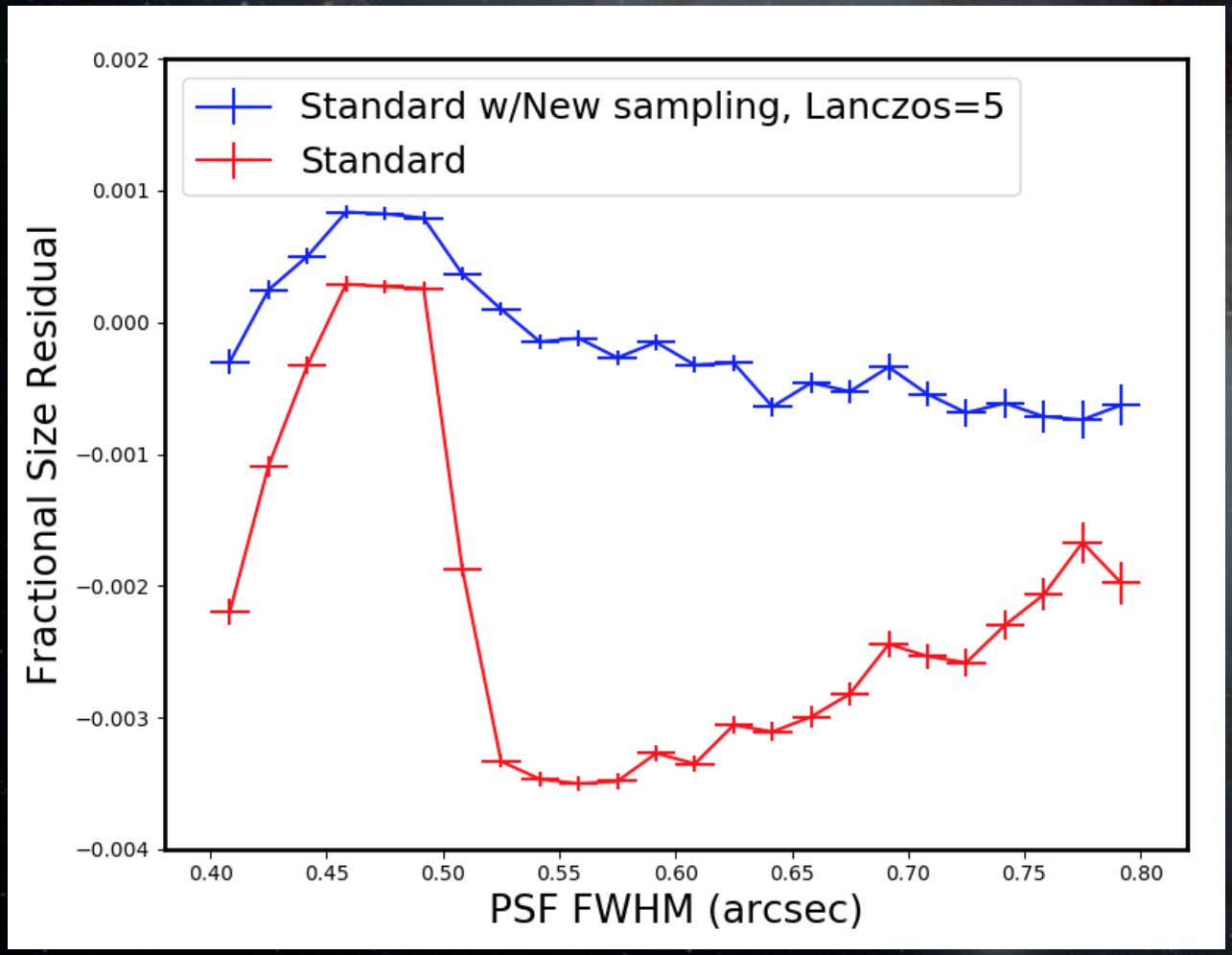
The eye of ‘y’

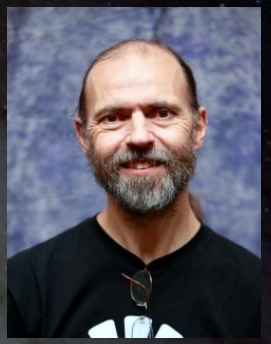
Previous version

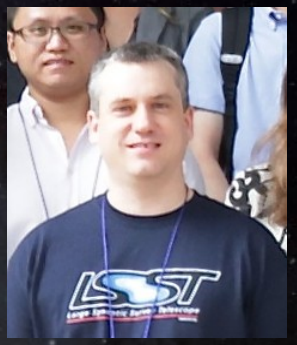
Latest version

Pipeline efforts #3 and more

A over-sampling bug in PSFEx has been fixed. This is a BIG fix done by our Princeton colleagues. There are more good features for the coming release.



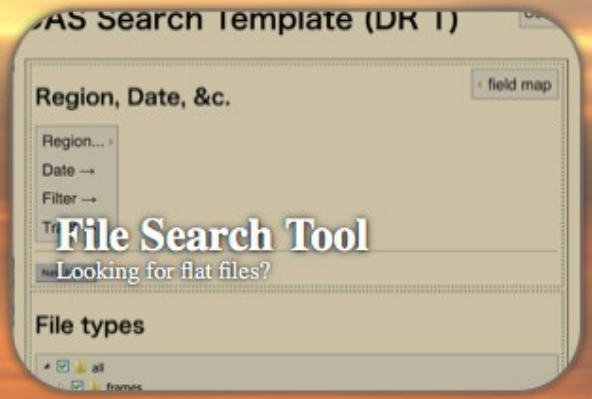


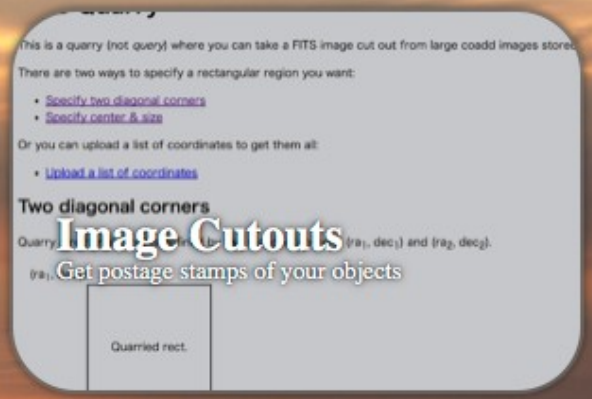


hsc-pfsgw.mtk.nao.ac.jp

PFS Proto-type Science Database

See Koike-kun's poster #12 for details





National Astronomical Observatory of Japan

Johns Hopkins University

SciServer

idies

Open "https://hsc-pfsgw.mtk.nao.ac.jp/compute/" in a new tab behind the current one


On-site Log System

HSC On-Site Log System

Observers can get extremely useful QA information in a few minutes after the data acquisition.
This is a beautiful system built by Furusawa-san and Koike-kun.

22624	object150	2015-01-27	03:47:44.603	HSC-Y	SSP_DEEP_COSMOS	270.00	56.57	54.51	0.00	0.61	26.14	7505.07	1.03	3.77	3.61	D-05-010004-01, N=1/5, DRA=150, DDEC=75	ρ	⇒	δ	Δ	#	δ	Δ	#	⇒	⇒	⇒		e
22622	object149	2015-01-27	03:46:40.563	HSC-Y	SSP_DEEP_COSMOS	30.00	56.79	54.28	0.00	0.63	26.14	848.88	1.03	3.77	3.81	D-05-010004-01-00000	ρ	⇒	δ	Δ	#	δ	Δ	#	⇒	⇒	⇒		e
22620	object148	2015-01-27	03:41:34.818	HSC-Y	SSP_DEEP_COSMOS	270.00	59.04	52.37	0.00	0.62	26.15	7386.92	1.07	3.77	3.78	D-05-010003-01, N=1/5, DRA=150, DDEC=75	ρ	⇒	δ	Δ	#	δ	Δ	#	⇒	⇒	⇒		e
22618	object147	2015-01-27	03:40:30.762	HSC-Y	SSP_DEEP_COSMOS	30.00	59.25	52.10	0.00	0.73	26.14	806.49	1.04	3.77	3.76	D-05-010003-01-00000	ρ	⇒	δ	Δ	#	δ	Δ	#	⇒	⇒	⇒		e
22616	object146	2015-01-27	03:35:24.847	HSC-Y	SSP_DEEP_COSMOS	270.00	60.10	52.95	0.00	0.63	26.14	7351.60	1.04	3.77	3.75	D-05-010002-01, N=1/5, DRA=150, DDEC=75	ρ	⇒	δ	Δ	#	δ	Δ	#	⇒	⇒	⇒		e
22614	object145	2015-01-27	03:34:19.596	HSC-Y	SSP_DEEP_COSMOS	30.00	60.32	52.67	0.00	0.62	26.15	804.60	1.04	3.77	3.77	D-05-010002-01-00000	ρ	⇒	δ	Δ	#	δ	Δ	#	⇒	⇒	⇒		e
22612	object144	2015-01-27	03:29:05.351	HSC-Y	SSP_DEEP_COSMOS	270.00	62.55	50.37	0.00	0.70	26.14	7139.23	1.04	3.77	3.74	D-05-010001-01, N=1/5, DRA=150, DDEC=75	ρ	⇒	δ	Δ	#	δ	Δ	#	⇒	⇒	⇒		e
22610	object143	2015-01-27	03:27:55.074	HSC-Y	SSP_DEEP_COSMOS	30.00	62.78	50.02	0.00	0.57	26.13	782.16	1.02	3.77	3.82	D-05-010001-01-00000	ρ	⇒	δ	Δ	#	δ	Δ	#	⇒	⇒	⇒		e
22608	object142	2015-01-27	03:22:17.443	HSC-Y	SSP_UDEEP_COSMOS	300.00	62.60	48.08	0.00	0.75	26.14	7825.58	1.04	3.77	3.71	U-05-010001-04, N=2/5, DRA=150, DDEC=75	ρ	⇒	δ	Δ	#	δ	Δ	#	⇒	⇒	⇒		e
22606	object141	2015-01-27	03:16:39.238	HSC-Y	SSP_UDEEP_COSMOS	300.00	63.63	46.36	0.00	0.68	26.13	7705.77	1.02	3.77	3.76	U-05-010001-04, N=1/5, DRA=150, DDEC=75	ρ	⇒	δ	Δ	#	δ	Δ	#	⇒	⇒	⇒		e
22604	object140	2015-01-27	03:10:55.283	HSC-Y	SSP_UDEEP_COSMOS	300.00	64.72	44.52	0.00	0.58	26.13	7468.26	1.03	3.77	3.79	U-05-010001-03, N=5/5, DRA=150, DDEC=75	ρ	⇒	δ	Δ	#	δ	Δ	#	⇒	⇒	⇒		e
22602	object139	2015-01-27	03:05:21.903	HSC-Y	SSP_UDEEP_COSMOS	300.00	65.75	42.42	0.00	0.54	26.13	7413.72	1.03	3.77	3.85	U-05-010001-03, N=4/5, DRA=150, DDEC=75	ρ	⇒	δ	Δ	#	δ	Δ	#	⇒	⇒	⇒		e
22600	focus138	2015-01-27	03:02:29.095	HSC-Y	FOCUSING	10.00	66.19	40.89	0.00	0.54	26.16	1748.81	1.07	3.90	3.87	NODATA	ρ	⇒	δ	Δ	#	δ	Δ	#	⇒	⇒	⇒		e
22598	object137	2015-01-27	02:56:45.024	HSC-Y	SSP_WIDE	200.00	55.10	52.44	0.00	0.73	26.13	5336.93	1.03	3.77	3.72	W-05-010081-01-00005	ρ	⇒	δ	Δ	#	δ	Δ	#	⇒	⇒	⇒		e
22596	object136	2015-01-27	02:52:51.899	HSC-Y	SSP_WIDE	200.00	57.65	53.60	0.00	0.67	26.15	5229.30	1.06	3.77	3.76	W-05-010232-01-00004	ρ	⇒	δ	Δ	#	δ	Δ	#	⇒	⇒	⇒		e
22594	object135	2015-01-27	02:48:58.059	HSC-Y	SSP_WIDE	200.00	57.39	53.89	0.00	0.70	26.15	5194.94	1.05	3.77	3.78	W-05-010231-01-00004	ρ	⇒	δ	Δ	#	δ	Δ	#	⇒	⇒	⇒		e
22592	object134	2015-01-27	02:45:00.273	HSC-Y	SSP_WIDE	200.00	59.01	49.57	0.00	0.76	26.13	5187.83	1.02	3.77	3.73	W-05-010158-01-00004	ρ	⇒	δ	Δ	#	δ	Δ	#	⇒	⇒	⇒		e
22590	object133	2015-01-27	02:41:07.641	HSC-Y	SSP_WIDE	200.00	58.76	49.92	0.00	0.76	26.13	5164.01	1.03	3.77	3.75	W-05-010157-01-00004	ρ	⇒	δ	Δ	#	δ	Δ	#	⇒	⇒	⇒		e
22588	object132	2015-01-27	02:37:14.861	HSC-Y	SSP_WIDE	200.00	59.22	46.72	0.00	0.70	26.13	5105.73	1.03	3.77	3.74	W-05-010082-01-00004	ρ	⇒	δ	Δ	#	δ	Δ	#	⇒	⇒	⇒		e
22586	object131	2015-01-27	02:33:15.989	HSC-Y	SSP_WIDE	200.00	61.65	49.72	0.00	0.67	26.14	4946.30	1.05	3.77	3.73	W-05-010232-01-00003	ρ	⇒	δ	Δ	#	δ	Δ	#	⇒	⇒	⇒	retake of "object124" because stars in "object124" image are elongated fumiy@stars	e
22584	object130	2015-01-27	02:29:20.244	HSC-Y	SSP_WIDE	200.00	61.41	50.08	0.00	0.67	26.14	5027.27	1.06	3.77	3.76	W-05-010231-01-00003	ρ	⇒	δ	Δ	#	δ	Δ	#	⇒	⇒	⇒	retake of "object123" because stars in "object123" image are elongated fumiy@stars	e
22582	bias129	2015-01-27	02:25:54.339	NONE	BIAS	0.00	60.33	44.86	0.00	-1.00	-99.00	0.00	-9999.00	3.77		NODATA	ρ	⇒	δ	Δ	#	δ	Δ	#	⇒	⇒	⇒		e
22580	bias128	2015-01-27	02:18:28.031	NONE	BIAS	0.00	61.61	42.40	0.00	-1.00	-99.00	0.00	-9999.00	3.77		NODATA	ρ	⇒	δ	Δ	#	δ	Δ	#	⇒	⇒	⇒		e
22576	bias126	2015-01-27	01:45:22.978	NONE	BIAS	0.00	66.46	28.35	0.00	-1.00	-99.00	0.00	-9999.00	3.77		NODATA	ρ	⇒	δ	Δ	#	δ	Δ	#	⇒	⇒	⇒		e
22572	object125	2015-01-27	01:10:08.161	HSC-Y	SSP_WIDE	200.00	69.22	7.44	0.00	0.69	26.13	4161.61	1.03	3.77	3.72	W-05-010081-01-00004	ρ	⇒	δ	Δ	#	δ	Δ	#	⇒	⇒	⇒		e
22570	object124	2015-01-27	01:06:11.813	HSC-Y	SSP_WIDE	200.00	72.26	2.56	0.00	0.79	26.13	4202.49	1.03	3.77	3.71	W-05-010232-01-00003	ρ	⇒	δ	Δ	#	δ	Δ	#	⇒	⇒	⇒		e

HSC On-Site Log System

We are planning to release the information from the on-site system to the public because

1) the numbers and QA plots from the onsite system are extremely useful for archive users
2) observers cannot access the onsite system once they left the observatory

Public users can look at all the QA info for public data. Private data can be viewed only by the PIs.

We would like to include your comments (if you left any) in the release. We will contact all the previous PIs later, but if you have any major concerns, please talk to me.

Please be aware that your future comments will also be released.


Open-Use Data Analysis

Delivery of Processed Data

We are going to start the processed data delivery service, which is;

After each observing run, we process your data with the latest version of the pipeline and send you the processed data.

We need to do more tests in the come runs, but we hope to start this service sometime this year.

Data Acquisition

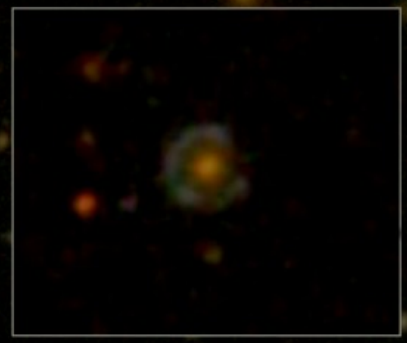
Data Processing

You receive processed data

HSC Legacy Archive

HSC data are extremely valuable! We plan to process ALL the public HSC data and make the processed data available to the community.

Our first step would be to release a beta version including data from 2014. Depending strongly on the infrastructure (see Furusawa-san's talk), we hope to start the processing this year.



Have fun with the HSC data!