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Observatory Operations: Strategies, Processes, and Systems VII

Alison B. Peck
Robert L. Seaman
Chris R. Benn
Editors

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Contents

ix	<i>Authors</i>
xv	<i>Conference Committee</i>
xvii	<i>Introduction</i>

Part One

SESSION 1 OPERATIONS AND DATA QUALITY CONTROL I

10704 01	Long-term monitoring of the throughput in Las Cumbres Observatory's fleet of telescopes [10704-1]
10704 02	Finding fault: 19 years of fault-tracking during night operations at the Subaru Telescope [10704-2]
10704 03	VLT unit telescopes performance monitoring [10704-3]
10704 04	A daytime and nighttime task manager for Paranal Science Operations [10704-4]
10704 05	Alignment of wide field corrector against the primary mirror optical axis by spot images on auto guide cameras for prime focus spectrograph of Subaru Telescope [10704-5]

SESSION 2 OPERATIONS AND DATA QUALITY CONTROL II

10704 06	Stray-light calibration and correction for the MetOp-SG 3MI mission [10704-7]
10704 07	The dirt in astronomy's genie lamp: ThO contamination of Th-Ar calibration lamps [10704-8]

SESSION 3 TIME DOMAIN AND TRANSIENT SURVEYS

10704 08	Timekeeping infrastructure for the Catalina Sky Survey [10704-10]
10704 0A	SALT and SAAO strategy, focusing on the time-domain: process, plans, and challenges [10704-12]
10704 0B	The SOAR Telescope as a node in a time domain followup-network: concepts and plans [10704-13]

- 10704 0C **A telescope control and scheduling system for the Gravitational-wave Optical Transient Observer (GOTO)** [10704-14]
- 10704 0D **Dark energy survey operations: years 4 and 5** [10704-15]

SESSION 4 DATA FLOW AND MANAGEMENT

- 10704 0E **LOFAR operations: lessons learned and challenges** [10704-16]
- 10704 0F **ESPRESSO data flow in operations: results of commissioning activities** [10704-17]
- 10704 0H **Achieving a rolled-up view of SKA TM health status and state: definition and analysis of aggregation methods** [10704-19]

SESSION 5 OPERATIONS BENCHMARKING AND METRICS I

- 10704 0I **Investigating global instrumental response for the JVLA low band ionosphere and transient experiment (VLITE)** [10704-20]

SESSION 6 OPERATIONS BENCHMARKING AND METRICS II

- 10704 0J **Diversity and inclusion in observatory operations: Advocating for and implementing positive change** [10704-21]
- 10704 0K **Diversity at ESO: Paranal Observatory** [10704-22]
- 10704 0L **Sex-disaggregated systematics in Canadian time allocation committee telescope proposal reviews** [10704-23]
- 10704 0M **Every second of science is sacred: automating science operations tracking at JCMT** [10704-24]
- 10704 0N **Keck Observatory telescope control system upgrade status report** [10704-25]
- 10704 0O **Astronomy operations with the Southern African Large Telescope (SALT): SALT is doing great!** [10704-26]
- 10704 0P **SALT achieving synergy through integrated operations** [10704-27]
- 10704 0Q **Preparing the NIRSpec/JWST science data calibration: from ground testing to sky** [10704-28]
- 10704 0R **ESO telbib: learning from experience, preparing for the future** [10704-29]

10704 OS **A bibliometric analysis of observatory publications for the period 2012-2016** [10704-30]

SESSION 7 PROGRAM AND OBSERVATION SCHEDULING I

- 10704 OT **Science operations rehearsals: planning and scheduling of the James Webb Space Telescope**
[10704-31]
- 10704 OU **Implementation and Results of the QSO-SNR mode at the Canada-France-Hawaii telescope**
[10704-32]
- 10704 OV **Optimal scheduling and science delivery of spectra for millions of targets in thousands of fields:
the operational concept of the Maunakea spectroscopic explorer (MSE)** [10704-33]
- 10704 OW **Design of the observation queue scheduler for WEAVE on the WHT** [10704-34]
- 10704 OX **Design of observational and control system of imaging system of a 1.2-meter-aperture
telescope** [10704-35]

SESSION 8 PROGRAM AND OBSERVATION SCHEDULING II

- 10704 OZ **The abstract observatory: an interface for networking telescopes** [10704-37]
- 10704 IO **Autonomous observation scheduling in astronomy** [10704-38]
- 10704 II **Observation scheduling with a free bug tracking software: redmine 4 obs** [10704-39]

SESSION 9 ARCHIVE OPERATIONS, SURVEYS AND DATASETS

- 10704 I3 **Overview of the Mikulski Archive for space telescopes for the James Webb Space Telescope
data archiving** [10704-41]
- 10704 I4 **Enabling new science with MAST community contributed data collections** [10704-42]
- 10704 I5 **The TESS science data archive** [10704-43]
- 10704 I6 **The ESO science archive: supporting and enhancing science from the La Silla Paranal
Observatory** [10704-44]
- 10704 I7 **14 years of Spitzer publications: data use and reuse** [10704-45]
- 10704 I8 **Indicators of the science impact of an observatory** [10704-46]

Part Two

SESSION 10 SCIENCE OPERATIONS PROCESSES AND WORKFLOWS I

- 10704 19 **The square kilometre array: challenges of distributed operations and big data rates** [10704-47]
- 10704 1A **Celebrating 20 years of scientific and technical results with the INAF-TNG Telescope** [10704-48]
- 10704 1C **Insight-HXMT science operations** [10704-50]
- 10704 1D **Lessons learned in extended-extended Spitzer Space Telescope operations** [10704-51]
- 10704 1E **Transforming the Canada France Hawaii Telescope (CFHT) into the Maunakea Spectroscopic Explorer (MSE): a conceptual observatory building and facilities design** [10704-66]

SESSION 11 SCIENCE OPERATIONS PROCESSES AND WORKFLOWS II

- 10704 1F **Eight years of solar observations with PICARD** [10704-52]
- 10704 1G **The Gemini Observatory large and long programs** [10704-53]
- 10704 1H **Reshaping the user experience at the Large Binocular Telescope Observatory (LBTO)** [10704-54]
- 10704 1I **Observing recommendations for JWST MIRI users** [10704-55]
- 10704 1J **Target acquisition for multi-object spectroscopy with JWST NIRSpec** [10704-56]
- 10704 1K **Flexible and dynamic observing at the ESO Very Large Telescope** [10704-57]
- 10704 1M **Connecting ELT to the current VLT operations scheme: how the telescope and instrument operators, as well as other groups at Paranal Observatory, are preparing the staff for the ELT era** [10704-59]
- 10704 1O **The science calibration challenges of next generation highly multiplexed optical spectroscopy: the case of the Maunakea Spectroscopic Explorer** [10704-62]

SESSION 12 SITE AND FACILITIES OPERATIONS I

- 10704 1P **Past and future evolution of Gemini operations** [10704-63]
- 10704 1Q **Visiting instruments as part of a strategic plan** [10704-64]

10704 1R	Sharing and optimizing operations and resources between Maunakea Observatories [10704-65]
10704 1S	Las Campanas Observatory [10704-67]
10704 1U	MeerKAT operations in the era of large astronomical telescopes [10704-69]
10704 1V	APEX beyond 2016: the evolution of an experiment into an efficient and productive Submillimeter Wavelength Observatory [10704-70]
10704 1W	Using near real-time satellite data for severe weather protection of remote telescope facilities [10704-80]
10704 1X	Merging operations on the survey telescopes at PAO [10704-71]

SESSION 13 SITE AND FACILITIES OPERATIONS II

10704 1Y	Technical operations and maintenance activities at the Paranal Observatory [10704-72]
10704 20	Testing of the LSST's photometric calibration strategy at the CTIO 0.9 meter telescope [10704-74]
10704 21	The Observatorio Astrofísico de Javalambre: engineering for empowering observatory operations [10704-75]
10704 22	Operation of the astronomical monitoring stations at Mt. Wumingshan [10704-76]
10704 23	More effective fault management at SALT [10704-77]
10704 24	SALT integrated safety management system [10704-78]
10704 25	Deskilling SALT primary mirror recoating process [10704-79]
10704 26	A bottom-up and top-down approach to cloud detection [10704-81]
10704 27	Calibration trending in the Spitzer beyond era [10704-88]

POSTER SESSION

10704 29	Observing in higher humidity [10704-82]
10704 2A	The WEAVE observatory control system [10704-83]
10704 2B	Weather trends at the Magdalena Ridge Observatory [10704-84]

10704 2C	Photometry of transients and variable sources at the Osservatorio Polifunzionale del Chianti (OPC) [10704-85]
10704 2D	Preparing SALT's software for the future [10704-86]
10704 2F	Implementation of a building automation system for the W.M. Keck Observatory summit facilities [10704-89]
10704 2H	Development of the Arizona Robotic Telescope Network [10704-91]
10704 2I	Fast photometry of stars [10704-92]
10704 2J	Framework to use modern big data software tools to improve operations at the Paranal Observatory [10704-93]
10704 2K	ALMA engineering fault detection framework [10704-94]
10704 2L	New approach to the space mission program optimisation: WSO-UV [10704-95]
10704 2M	The role of the US National Office in the Gemini partnership [10704-96]
10704 2O	Molding Chandra's public face: twitter for data products and more [10704-98]
10704 2P	Airplanes and satellites: how to keep LGS operations efficient and safe at the Large Binocular Telescope Observatory [10704-99]
10704 2R	Expected observing efficiency of the Maunakea Spectroscopic Explorer (MSE) [10704-101]
10704 2S	RFI mitigation through prediction and avoidance [10704-102]

Authors

Numbers in the index correspond to the last two digits of the seven-digit citation identifier (CID) article numbering system used in Proceedings of SPIE. The first five digits reflect the volume number. Base 36 numbering is employed for the last two digits and indicates the order of articles within the volume. Numbers start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B...0Z, followed by 10-1Z, 20-2Z, etc.

Abbott, T. M. C., 0D	Bonneau, Jean-Michel, 0K
Abrams, Don Carlos, 0W, 2A	Bordelon, Dominic, 0R
Adamson, Andrew J., 1P, 1Q, 1R	Boroson, Todd, 0B, 0Z
Adler, David S., 0T	Bortoletto, F., 1A
Agostini, M., 2C	Boschin, W., 1A
Agurto, Claudio, 1V	Boutsia, K., 1S
Alberts, Stacey, 1I	Bowman, Mark K., 0B, 0Z
Allam, S., 0D	Briceno, Cesar, 0B
Alvarez, O., 0D	Brillant, Stéphane, 04, 1K, 1M, 1X
Alves de Oliveira, Catarina, 0Q, 1J	Brink, Janus, 2D
Amarandei, B., 1K	Brout, D., 0D
Andersen, M., 1P	Browne, Keith R. J., 0P, 23, 24, 29
Angeles, Fernando, 2I	Buckley, David A.H., 0A
Annis, J., 0D	Burdullis, Todd, 0U
Antón, J.L., 2I	Buscher, D., 2B
Araneda, Juan-Pablo, 1V	Calderone, G., 0F
Arnaboldi, Magda, 16	Cano, Diego, 2A
Arriagada, Oriel, 1V	Cantarutti, Rolando, 0B
Astier, Joseph, 1H	Cantzler, Michael, 1V
Azagra, Francisco, 1V	Canzari, Matteo, 0H
Balbinot, E., 0D	Capasso, R., 0D
Baldwin, J. L., 2F	Cárdenas, Mauricio, 1V
Barbieri, C., 1A	Cardwell, Andrew, 1H
Barrick, Greg, 1E	Carey, Sean J., 1D, 27
Basargina, Olga, 2L	Caro, Patricio, 1V
Bauman, Steven E., 1E	Carrasco, Esperanza, 0W, 2A
Beccari, G., 1K	Carrasco, Rodrigo A., 2K
Bechtol, K., 0D	Castillo, J., 2I
Beck, Tracy L., 1J	Cawthon, R., 0D
Becker, Glenn, 2O	Cenarro, A. J., 2I
Bell, Graham, 0M	Ceppatelli, G., 1A
Bello, R., 2I	Cerda Hernández, Susana, 1M, 1X
Benedict, Tom, 1E	Chang, C., 0D
Benn, Chris, 0W, 2A	Chang, Liang, 0X
Bennett, Carson Lee, 1D	Chen, Jie, 0X
Bernstein, G. M., 0D	Chen, Jin-ting, 0X
Betti, L., 2C	Chen, L., 1C
Bhargava, S., 0D	Chen, Ya-qi, 0X
Bhatawdekar, R., 0D	Chote, Paul, 0C
Biagini, A., 2C	Christou, Julian C., 2P
Bielsa, S., 2I	Chrysostomou, Antonio, 19
Bierwirth, T., 1K	Chueca, S., 2I
Bilbao, Armando, 1E	Cid, Claudia, 1M
Birkmann, Stephan M., 0Q, 1J	Ciechanowicz, Mirosław, 1V
Boccas, M., 1Y	Cirami, R., 0F
Bocquet, S., 0D	Civera, T., 2I
Boeker, Torsten, 0Q, 1J	Clarke, Tracy E., 0I
Bolton, Rosie, 19	Clermont, L., 06
Bonifacio, Piercarlo, 0W, 2A	Coetzee, J. Christiaan, 0A, 0O, 0P, 24, 25, 29

Cofie, Nicholas, 0L	Ferté, A., 0D
Conselice, C. J., 0D	Flagey, Nicolas, 0V, 1E, 1O, 2R
Conway, Patrick, 0I	Fleming, Scott W., 14, 15
Cook, E., 0D	Focardi, M., 2C
Corbard, T., 1F	Fodil, M., 1F
Coughlin, Michael W., 20	Forchì, Vincenzo, 16
Crabtree, Dennis R., 0L, 0S	Forshay, Peter, 13, 14
Crause, Lisa, 0A	Fourniol, Nathalie, 16
Crawford, Steven M., 0A, 0O, 2D	Fox, Ori, 1I
Creech-Eakman, M. J., 2B	Frantz, M., 1Y
Cristiani, S., 0F	Frieman, J., 0D
Cristobal-Hornillos, D., 2I	Friswell, I., 0D
Cruz, J., 0D	Furnell, K. E., 0D
Cupani, G., 0F	Gabor, Paul, 2H
D'Abrusco, Raffaele, 18, 2O	Gaffon, Emanuel, 2A
da Costa, L., 0D	Gajjar, Hitesh, 25
Daddi, N., 06	Galloway, Duncan, 0C
Dalton, Gavin, 0W, 2A	García Marín, Macarena, 1I
Damé, L., 1F	Garcia, E., 2B
D'Andrea, C., 0D	Garzarán, J., 2I
Das, R., 0D	Gasho, Victor, 2H
Davis, Gary R., 19	Gedig, Mike, 1E
Delgado, Jose Miguel, 2A	Gelman, L., 0D
Delmotte, Nausicaa, 16	Gerdes, D. W., 0D
Dempsey, Jessica T., 0M, 1R	Ghedina, A., 1A
Den Hartog, Elizabeth A., 07	Giacintucci, Simona, 0I
Depagne, Éric, 0O	Giardino, Giovanna, 0Q, 1J
DePoy, D. L., 0D	Gibbs, Alex R., 08
Deustua, Susana, 20	Gilbank, David, 0A
Devost, Daniel, 0U	Gill, M. S. S., 0D
Dhillon, Vik S., 0C	Gino, C., 2B
Diaz, E., 1Y	Glaccum, William, 27
Díaz-Martín, M. C., 2I	Glasse, Alistair, 1I
Di Carlo, Matteo, 0H	Goldstein, D. A., 0D
Dicken, Dan, 1I	Golota, Taras, 2H
Diehl, H. T., 0D	González Hernández, J. I., 0F
Di Marcantonio, P., 0F	González, Edouard, 1V
Di Mille, F., 1S	Gonzalez, S., 1Y
di Serego Alighieri, S., 1A	Goodsell, Stephen J., 1Q
D'Odorico, V., 0F	Gössl, Claus A., 1I
Dolci, Mauro, 0H	Graves, Sarah, 0M
Domínguez, M., 2I	Green, Greg, 1E
Domínguez-Palmero, Lilian, 0W, 2A	Greene, Tom, 1I
Drlica-Wagner, A., 0D	Gribbin, Frank, 2A
Dumitru, B., 1K	Grigel, Eric, 1E
Dumke, Michael, 1V	Grillmair, Carl, 27
Dyer, Martin J., 0C	Grothkopf, Uta, 0R
Ederoclite, A., 2I	Gruen, D., 0D
Edwards, Michelle L., 1H	Gruendl, R. A., 0D
Elias, Jonathan H., 0B	Guerra, Juan C., 2J
Elizares, Casey, 1E	Guest, Steve, 0W, 2A
Elliot, A., 0D	Gulledge, D. J., 0D
Etscorn, D., 2B	Guyonnet, Augustin, 20
Everett, S. W., 0D	Gwyn, Stephen D. J., 0U
Fariña, Cecilia, 0W, 2A	Hainaut, Olivier, 0K, 16
Fausti Neto, A., 0D	Hall, Patrick, 0V, 1O
Feng, Yi, 0X	Hamilton, S., 0D
Ferrarese, Laura, 1Q	Harbeck, Daniel-Rolf, 0I
Ferruit, Pierre, 0Q, 1J	

Hargis, Jonathan R., 13, 14
 Harvey-Smith, Lisa, 1W, 2S
 Haubois, Xavier, 1M
 Hendricks, Johan, 29
 Hernández-Montegudo, C., 21
 Herrera, Christian, 1V
 Hervieu, Calum, 0V, 2R
 Hesman, Brigitte E., 0T
 Hettlage, Christiaan, 0O, 23, 2D
 Hibon, Pascale, 0K
 Hill, Alexis, 0V, 1E, 1O, 2R
 Hill, G. M., 2F
 Hines, Dean, 1I
 Hinkle, Kenneth H., 2M
 Ho, Kevin, 2R
 Ho, Paul T. P., 0M
 Hollowood, D., 0D
 Honscheid, K., 0D
 Hopp, Ulrich, 1I
 Hora, Joseph L., 27
 Huang, Y., 1C
 Hühdepohl, G., 1Y
 Hulme, Stephen, 2D
 Hunt, Joseph C., 1D
 Hunt, Sharon, 2M
 Iglesias-Marzoa, R., 21
 Ikhlef, R., 1F
 Indermuehle, Balthasar T., 1W, 2S
 Infante, L., 1S
 Ingalls, Jim G., 27
 Iñiguez, C., 21
 Jakobsen, Peter, 1J
 James, D. J., 0D
 Jannuzi, Buell, 2H
 Jenkins, Jon M., 15
 Jia, Ming-hao, 0X
 Jia, S. M., 1C
 Jiang, Feng-xin, 0X
 Jiménez, J., 21
 Johnson, Chris, 2H
 Johnson, M. D., 0D
 Johnson, M. W. G., 0D
 Jørgensen, I., 1P
 Kahn, Mubashir Ahmed, 16
 Kahr, Bolinda E., 1D
 Kastinen, I., 1Y
 Kendrew, Sarah, 1I
 Kent, S., 0D
 Kerber, Florian, 07
 Kessler, R. S., 0D
 Keyes, Charles D., 1J
 Khullar, G., 0D
 Kissler-Patig, Markus, 0K, 1Q
 Klaassen, Pamela, 1I
 Klein, Thomas, 1V
 Kleinman, Scot J., 1Q
 Klinglesmith, D. A., 2B
 Kniazev, Alexei, 0O
 Koekemoer, Anton M., 14
 Koen, Thea, 0O
 Koeslag, Anthony, 2D
 Kotze, Marissa, 0O
 Kovacs, E., 0D
 Krasuski, Tomas, 0N
 Kremin, A., 0D
 Krick, Jessica E., 27
 Kron, R., 0D
 Kubánek, Petr, 1H, 2H
 Kuhn, Rudolph, 0O, 2D
 Kuropatkin, N., 0D
 Kwok, Shui Hung, 0N
 L. Aguerri, J. Alfonso, 0W, 2A
 Labayru, Maria Francisca, 0K
 La Fuente, Carlos, 1X
 Lagage, Pierre-Olivier, 1I
 Laine, Seppo, 27
 Lam, Marco C., 26
 Lange, Uwe, 16
 Lasker, J., 0D
 Latham, David W., 15
 Lathrop, A., 0D
 Law, David, 1I
 Lefebvre, Michael, 2P
 Leggett, S., 1P
 Levay, Karen, 13, 14
 Li, T. S., 0D
 Li, Xiaobo, 22
 Littlefair, Stuart, 0C
 Liu, Yu, 22
 Lo Curto, Gaspare, 07, 0F
 Lo, David, 1E
 Loewen, Nathan, 1E
 Look, Ivan, 1E
 López-Alegre, G., 21
 López-Sanjuan, C., 21
 Lorentz, Thomas, 1E
 Love, Jonathan J., 25, 29
 Lovis, C., 0F
 Lowrance, Patrick J., 1D, 27
 Lützgendorf, Nora, 0Q
 Lyke, Jim, 0N
 Ma, X., 1C
 Maartens, Deneys S., 10
 Mac-Auliffe, Felipe, 1V
 Macebele, Nhlavutelo, 0O, 2D
 Mader, Jeff, 0N
 Mahoney, Billy, 0U, 2R
 Mahoney, William A., 1D
 Makananise, Thabelo, 29
 Manera, M., 0D
 Manset, Nadine, 0U
 Manuel, Eric, 1E
 Marang, Fred, 0O
 March, M., 0D
 Marchant, Jonathan M., 26
 Margheim, Steven J., 1G, 1P
 Marin-Franch, A., 21
 Marquarding, Malte, 1W, 2S

Marshall, J. L., 0D
 Marston, Anthony, 13, 14
 Martin, Carlos, 2A
 Martinez, Peter, 10
 Mascetti, Laura, 16
 Mastrandread, C., 06
 Matsuda, Richard H., 1R
 Mayekiso, Anelisiwe, 0O, 2D
 Mazy, E., 06
 McCann, Kevin, 0N
 McCarney, Ben, 0N
 McConnachie, Alan W., 0V, 1E, 1O, 2R
 McCully, Curtis, 01
 McLean, Brian, 14
 Meakins, Silvia, 0R
 Medford, M., 0D
 Meftah, M., 1F
 Mégevand, D., 0F
 Menanteau, F., 0D
 Michel, C., 06
 Micol, Alberto, 16
 Middleton, Kevin, 0W, 2A
 Mieske, Steffen, 04, 1K, 1M, 1X
 Mignot, Shan, 1O
 Miller, Bryan, 0B, 1P
 Milli, Julien, 1M, 2J
 Milne, Peter, 2H
 Miszalski, Brent, 0O
 Modigliani, A., 0F
 Mohammed, I., 0D
 Molaro, P., 0F
 Molinari, E., 1A
 Mondrik, Nicholas, 20
 Monroy, M., 0D
 Montenegro-Montes, Francisco M., 1V
 Moraes, B., 0D
 Morand, F., 1F
 Morgan, Edward, 15
 Morganson, E., 0D
 Moritani, Yuki, 05
 Morris, Huw, 0W
 Morrison, Jane, 1I
 Moutou, Claire, 0U
 Muir, J., 0D
 Mullally, Susan E., 13, 14, 15
 Muller, Ronny, 1E
 Muñoz-Mateos, Juan Carlos, 1M
 Murga, Gaizka, 1E
 Murowinski, Rick, 1E
 Murphy, M., 0D
 Naponiello, L., 2C
 Navarrete, Julio, 1M
 Nave, Gillian, 07
 Neilsen, E., 0D
 Nitta, A., 1P
 Nord, B., 0D
 Norman, Dara, 0J, 2M
 Nurzia, Vittorio, 03, 1Y
 Oliva, E., 1A
 Orlov, Valeri, 2I
 Ortiz, José L., 2K
 Osip, D., 1S
 Osorio, Juan, 2J
 Ou, G., 1C
 Pace, A. B., 0D
 Pace, E., 2C
 Pachot, C., 06
 Palmese, A., 0D
 Palunas, P., 1S
 Park, Y., 0D
 Parra, Rodrigo, 1V
 Parraguez, Diego, 1M
 Parsons, Harriet A. L., 0M
 Pasquato, M., 1K
 Patkós, Enikő, 0K
 Paz-Chinchón, F., 0D
 Peck, Alison B., 1Q
 Peek, J.E. G., 14
 Pena, Eduardo, 2J
 Peña-Guerrero, Maria, 1J
 Pepe, F., 0F
 Pereira, M. E. S., 0D
 Pérez-Beaupuits, Juan Pablo, 1V
 Péron, Michele, 0K
 Peters, Wendy, 0I
 Petravick, D., 0D
 Phillips, M., 1S
 Pickles, Andrew, 01
 Picó, Sergio, 0W, 2A
 Pino Pavez, Andres, 04, 1M, 1X
 Pizzo, Roberto, 0E
 Plazas, A. A., 0D
 Poh, J., 0D
 Pohlen, Michael, 0M
 Popowicz, Adam, 2I
 Poretti, E., 1A
 Potter, Stephen, 0A
 Power, Jennifer, 1H
 Pozzobon, P., 1Y
 Pretorius, Retha, 0A
 Primas, Francesca, 0K
 Prochaska, T., 0D
 Proffitt, Charles, 1J
 Pruemmm, M., 1K
 Puga, Elena, 0Q
 Pye, John, 1I
 Qu, J.L, 1C
 Rabe, Paul, 29
 Rafferty, Claire, 0J
 Ragazzoni, R., 1A
 Rahmer, Gustavo, 2P
 Ramirez, C., 1Y
 Ramírez, Jorge, 1V
 Rawle, Tim, 0Q
 Regan, Michael, 1I
 Reil, K., 0D
 Reinero, Claudio, 1Y, 2J

Rejkuba, M., 1K
 Renaud, C., 1F
 Renil, Rosly, 1U
 Ressler, Michael, 1I
 Retzlaff, Jörg, 16
 Reynolds, John, 1W, 2S
 Rice, Joseph P., 20
 Ridgway, Stephen, 0B, 0J
 Rieke, George, 1I
 Rivas, Leonel, 04, 1M
 Rol, Evert, 0C
 Romaniello, Martino, 16
 Romer, A. K., 0D
 Romero Colmenero, Encarnacion, 0A, 0O, 0P, 2D
 Romero, Cristian M., 04, 1M, 1X
 Roodman, A., 0D
 Rots, Arnold, 18
 Ruan, Federico, 1E
 Rueda-Teruel, F., 21
 Rueda-Teruel, S., 21
 Rutten, R., 1P
 Sachkov, Mikhail, 2L
 Sako, M., 0D
 Salasnich, Bernardo, 2A
 Salgado, F., 1Y
 Salmon, Derrick, 1E
 Sand, David, 2H
 Santana, Jorge, 1V
 Santos, P., 1K
 Saunders, Eric S., 0B, 0Z
 Saunders, Will, 1O
 Sauseda, M., 0D
 Schmitt, Henrique, 0I
 Schmutzer, Ricardo, 2J
 Schroeder, Anja, 0O
 Scire, Elena, 17, 1D
 Scolnic, D., 0D
 Seaman, Robert L., 08
 Secco, L. F., 0D
 Sefako, Ramotholo, 0A
 Segovia, A., 0F
 Sevilla-Noarbe, I., 0D
 Shara, Michael, 0A, 0P
 Shaw, Richard A., 13, 14
 Sheng, Zhen-feng, 0X
 Shiao, Bernie, 14
 Shipp, N., 0D
 Shugart, Alysha, 0J
 Sickafoose, Amanda, 0A
 Silbermann, Nancy, 1D
 Simon, Etienne L., 24, 29
 Sirianni, Marco, 0Q, 1J
 Sisodia, Devendra, 16
 Skelton, Rosalind, 0O, 2D
 Skvarč, Jure, 2A
 Smareglia, Riccardo, 0H
 Smette, Alain, 1M
 Smith, J. A., 0D
 Smith, Nathan, 2H
 Smith, Robert J., 26
 Snigula, Jan M., 1I
 Soares-Santos, M, 0D
 Soergel, B., 0D
 Song, L. M., 1C
 Song, Qiwu, 22
 Song, Tengfei, 22
 Soriano, I., 21
 Sosnowska, D., 0F
 Sousa, S., 0F
 Sparks, William, 15
 Spekkens, Kristine, 0L
 Spiniello, Chiara, 16
 Stanga, R., 2C
 Stanghellini, Letizia, 2M
 Stebbins, A., 0D
 Steeghs, Danny, 0C
 Steele, Iain A., 26
 Steins, Steffi, 0K
 Steller, Malgorzata, 16
 Stephan, Christian, 1Y, 2J
 Sterzik, Michael Fritz, 16
 Stockman, Y., 06
 Stoehr, Felix, 16
 Storrie-Lombardi, Lisa J., 1D
 Story, K. T., 0D
 Street, Rachel A., 0B, 0Z
 Stringer, K., 0D
 Stubbs, Christopher W., 20
 Suarez Sola, Igor, 1H
 Sueoka, Stacey, 0J
 Summers, Doug, 1H
 Swade, Daryl, 15
 Swindell, Scott, 2H
 Szeto, Kei, 0V, 1E, 1O, 2R
 Tacconi-Garman, L. E., 1K
 Takato, Naruhisa, 05
 Tamura, Naoyuki, 05
 Tanaka, Yoko, 05
 Tarsitano, F., 0D
 Taylor, Brook, 01
 te Plate, Maurice, 0Q
 Temim, Tea, 1I
 Teran, Jose, 1E
 Thomas, B., 0D
 Thompson, Randy, 14
 Toledo, Pedro, 0K
 Torstensson, Karl, 1V
 Trager, Scott, 0W, 2A
 Trisciani, D., 2C
 Tseng, Shui-Ay, 14
 Tsubota, Kevin, 0N
 Tucker, D. L., 0D
 Ulaczyk, Krzysztof, 0C
 Urrutia, Rafael, 1E
 Väisänen, Petri, 0A, 0O, 0P, 2D
 Valenzuela, J., 1Y

Vallenari, Antonella, 0W, 2A
 Vanderspek, Roland, 15
 van Rooyen, Ruby, 10, 1U
 Van Wyk, Veronica, 0O
 Varela, J., 21
 Vázquez Ramió, H., 21
 Veillet, Christian, 1H
 Venegas, Paulina, 1V
 Vera, Ignacio, 16, 1K
 Vieau, A.-J., 1F
 Vivas, K., 0D
 Volgenau, Nikolaus, 0I
 Walker, A. R., 0D
 Walsh, Shane, 1H
 Walther, Craig A., 0M
 Wang, Jian, 0X
 Wang, Jingxing, 22
 Wang, M.-Y., 0D
 Weaverdyck, C., 0D
 Weaverdyck, N., 0D
 Weiner, Benjamin J., 2H
 Wester, W., 0D
 Wethers, C. F., 0D
 White, Richard L., 14
 Wiid, Eben P., 24, 29
 Wilkenson, R., 0D
 Wilkinson, Martin, 25
 Williams, Theodore B., 0A, 0O, 0P, 24
 Winegar, Thomas, 02
 Winkelman, Sherry, 18, 2O
 Woodward, John T., 20
 Wright, Gillian, 1I
 Wu, H.-Y., 0D
 Wymer, Kristen B., 0T
 Xia, Lidong, 22
 Xu, Yi-ling, 0X
 Yamasaki, Chris, 0J
 Yanes-Díaz, A., 21
 Yang, Chen-wei, 0X
 Yanny, B., 0D
 Zampieri, Stefano, 16
 Zaritsky, Dennis, 2H
 Zenteno, A., 0D
 Zhang, Guang-yu, 0X
 Zhang, Hong-fei, 0X
 Zhang, S., 1C
 Zhang, W. Z., 1C
 Zhang, Xuefei, 22
 Zhang, Y., 0D
 Zhao, Mingyu, 22

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- 1 Operations and Data Quality Control I

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- 3 Time Domain and Transient Surveys
David S. Adler, Space Telescope Science Institute (United States)
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- 4 Data Flow and Management
Robert L. Seaman, Lunar and Planetary Laboratory, The University of Arizona (United States)
- 5 Operations Benchmarking and Metrics I
Robert L. Seaman, Lunar and Planetary Laboratory, The University of Arizona (United States)
- 6 Operations Benchmarking and Metrics II
Antonio Chrysostomou, SKA Organisation (United Kingdom)
Lisa J. Storrie-Lombardi, Jet Propulsion Laboratory (United States)
- 7 Program and Observation Scheduling I
Alison B. Peck, Gemini Observatory (United States)
- 8 Program and Observation Scheduling II
Raffaele D'Abrusco, Smithsonian Astrophysical Observatory/Chandra X-ray Center (United States)
- 9 Archive Operations, Surveys and Datasets
Antonio Chrysostomou, SKA Organisation (United Kingdom)
Lisa J. Storrie-Lombardi, Jet Propulsion Laboratory (United States)
- 10 Science Operations Processes and Workflows I
Christian Veillet, Large Binocular Telescope Observatory (United States)
- 11 Science Operations Processes and Workflows II
Todd A. Boroson, Las Cumbres Observatory Global Telescope Network (United States)
Alison B. Peck, Gemini Observatory (United States)
- 12 Site and Facilities Operations I
David S. Adler, Space Telescope Science Institute (United States)
Todd A. Boroson, Las Cumbres Observatory Global Telescope Network (United States)
- 13 Site and Facilities Operations II
Antonio Chrysostomou, SKA Organisation (United Kingdom)
Raffaele D'Abrusco, Smithsonian Astrophysical Observatory/Chandra X-ray Center (United States)

Introduction

This conference provided a forum for discussion of a broad range of issues relevant to the operation of ground-based and space observatories, including observing/support models, calibration, data-reduction/archiving, quality control, engineering and infrastructure, fault-handling, productivity, and staffing.

While every ground and space observatory has its own individual and unique characteristics, each shares with the others a common need to execute technical and science operations in the most efficient and cost-effective way possible. We all share the goal of providing outstanding capabilities and reliable services to our users while operating within the constraints imposed by tight budgets and limited staffing. At the same time, the technical and logistical challenges are growing with the systems and network complexity of new observing modes, coordinated multi-facility and multi-messenger observing campaigns, fully or partially robotic facilities, integrated instrument pipelines and science archives, and the need to integrate more complex cyber-infrastructure such as the Grid and the Virtual Observatory. The subtle intricacies and large scales of new instrumentation naturally lead to correspondingly creative operations modalities.

Building on previous successful conferences, we invited the observatory operations community to gather to discuss lessons learned, progress made, and future initiatives. As before, we were particularly interested in discussions of what works versus what does not work, as well as what was planned versus what actually happened. Discussion of the interplay of science operations, technical operations, data management operations, and observatory development was particularly encouraged—especially as it impacts the maximization of science value return. The interplay of available funding, delivered capabilities/services, and user expectation management and how that informs observatory operations models is another important discussion topic. An additional topic of this conference was the rising support challenge of time-domain investigations. Demand for such support is steadily increasing, driven by the desire to study rare, random events as well as exoplanets and long-term, synoptic phenomena. Such studies are particularly challenging when they require coordination between multiple space and ground based observatories. While this trend has previously been driven by space-based detections of gamma ray bursts, the startup of ground-based time-domain survey facilities (ramping up to the Large Synoptic Survey Telescope) are **quickly** taking this challenge to a new level. Progress reports from new facilities coming on-line and existing facilities facing major new operational challenges were particularly encouraged.

This volume contains the contributions, both oral and poster, to this conference from the international community.

**Alison B. Peck
Robert L. Seaman
Chris R. Benn**