

# Rubin Observatory Operations: Enabling collaborative ground-up budget planning across a multi-team organization

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## ABSTRACT

Change is inevitable in large big budget operational programs. Embracing, rather than resisting, change is key to being proactive. It also keeps teams motivated as it's another avenue for leadership to "listen" to what is going on at the team level. At Rubin Observatory an agile approach to budgeting has been implemented. Annually a bottom up reset, called a scrub, is carried out across all departments of the Rubin Operations organization providing an opportunity to adapt and be nimble to changing situations that can affect resources and budgets. This paper will provide details on the importance for an annual budget scrub, processes followed, tools used and how the cycle continues year on year.

## 1. INTRODUCTION

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This is the Rubin Observatory overview paper:<sup>1</sup>

## APPENDIX A. REFERENCES

### REFERENCES

- [1] Ivezić, Ž., Kahn, S. M., Tyson, J. A., Abel, B., Acosta, E., Allsman, R., Alonso, D., AlSayyad, Y., Anderson, S. F., Andrew, J., Angel, J. R. P., Angeli, G. Z., Ansari, R., Antilogus, P., Araujo, C., Armstrong, R., Arndt, K. T., Astier, P., Aubourg, É., Auza, N., Axelrod, T. S., Bard, D. J., Barr, J. D., Barrau, A., Bartlett, J. G., Bauer, A. E., Bauman, B. J., Baumont, S., Bechtol, E., Bechtol, K., Becker, A. C., Becla, J., Beldica, C., Bellavia, S., Bianco, F. B., Biswas, R., Blanc, G., Blazek, J., Blandford, R. D., Bloom, J. S., Bogart, J., Bond, T. W., Booth, M. T., Borgland, A. W., Borne, K., Bosch, J. F., Boutigny, D., Brackett, C. A., Bradshaw, A., Brandt, W. N., Brown, M. E., Bullock, J. S., Burchat, P., Burke, D. L., Cagnoli, G., Calabrese, D., Callahan, S., Callen, A. L., Carlin, J. L., Carlson, E. L., Chandrasekharan, S., Charles-Emerson, G., Chesley, S., Cheu, E. C., Chiang, H.-F., Chiang, J., Chirino, C., Chow, D., Ciardi, D. R., Claver, C. F., Cohen-Tanugi, J., Cockrum, J. J., Coles, R., Connolly, A. J., Cook, K. H., Cooray, A., Covey, K. R., Cribbs, C., Cui, W., Cutri, R., Daly, P. N., Daniel, S. F., Daruich, F., Daubard, G., Daues, G., Dawson, W., Delgado, F., Dellapenna, A., de Peyster, R., de Val-Borro, M., Digel, S. W., Doherty, P., Dubois, R., Dubois-Felsmann, G. P., Durech, J., Economou, F., Eifler, T., Eracleous, M., Emmons, B. L., Fausti Neto, A., Ferguson, H., Figueroa, E., Fisher-Levine, M., Focke, W., Foss, M. D., Frank, J., Freemon, M. D., Gangler, E., Gawiser, E., Geary, J. C., Gee, P., Geha, M., Gessner, C. J. B., Gibson, R. R., Gilmore, D. K., Glanzman, T., Glick, W., Goldina, T., Goldstein, D. A., Goodenow, I., Graham, M. L., Gressler, W. J., Gris, P., Guy, L. P., Guyonnet, A., Haller, G., Harris, R., Hascall, P. A., Haupt, J., Hernandez, F., Herrmann, S., Hileman, E., Hoblitt, J., Hodgson, J. A., Hogan, C., Howard, J. D., Huang, D., Huffer, M. E., Ingraham, P., Innes, W. R., Jacoby, S. H., Jain, B., Jammes, F., Jee, M. J., Jenness, T., Jernigan, G., Jevremović, D., Johns, K., Johnson, A. S., Johnson, M. W. G., Jones, R. L., Juramy-Gilles, C., Jurić, M., Kalirai, J. S., Kallivayalil, N. J., Kalmbach, B., Kantor, J. P., Karst, P., Kasliwal, M. M., Kelly, H., Kessler, R., Kinnison, V., Kirkby, D., Knox, L., Kotov, I. V., Krabbendam, V. L., Krughoff, K. S., Kubánek, P., Kuczewski, J., Kulkarni, S., Ku, J., Kurita, N. R., Lage,

C. S., Lambert, R., Lange, T., Langton, J. B., Le Guillou, L., Levine, D., Liang, M., Lim, K.-T., Lintott, C. J., Long, K. E., Lopez, M., Lotz, P. J., Lupton, R. H., Lust, N. B., MacArthur, L. A., Mahabal, A., Mandelbaum, R., Markiewicz, T. W., Marsh, D. S., Marshall, P. J., Marshall, S., May, M., McKercher, R., McQueen, M., Meyers, J., Migliore, M., Miller, M., Mills, D. J., Miraval, C., Moeyens, J., Moolekamp, F. E., Monet, D. G., Moniez, M., Monkewitz, S., Montgomery, C., Morrison, C. B., Mueller, F., Muller, G. P., Muñoz Arancibia, F., Neill, D. R., Newbry, S. P., Nief, J.-Y., Nomerotski, A., Nordby, M., O'Connor, P., Oliver, J., Olivier, S. S., Olsen, K., O'Mullane, W., Ortiz, S., Osier, S., Owen, R. E., Pain, R., Palecek, P. E., Parejko, J. K., Parsons, J. B., Pease, N. M., Peterson, J. M., Peterson, J. R., Petravick, D. L., Libby Petrick, M. E., Petry, C. E., Pierfederici, F., Pietrowicz, S., Pike, R., Pinto, P. A., Plante, R., Plate, S., Plutchak, J. P., Price, P. A., Prouza, M., Radeka, V., Rajagopal, J., Rasmussen, A. P., Regnault, N., Reil, K. A., Reiss, D. J., Reuter, M. A., Ridgway, S. T., Riot, V. J., Ritz, S., Robinson, S., Roby, W., Roodman, A., Rosing, W., Roucelle, C., Rumore, M. R., Russo, S., Saha, A., Sassolas, B., Schalk, T. L., Schellart, P., Schindler, R. H., Schmidt, S., Schneider, D. P., Schneider, M. D., Schoening, W., Schumacher, G., Schwamb, M. E., Sebag, J., Selvy, B., Sembroski, G. H., Seppala, L. G., Serio, A., Serrano, E., Shaw, R. A., Shipsey, I., Sick, J., Silvestri, N., Slater, C. T., Smith, J. A., Smith, R. C., Sobhani, S., Soldahl, C., Storrie-Lombardi, L., Stover, E., Strauss, M. A., Street, R. A., Stubbs, C. W., Sullivan, I. S., Sweeney, D., Swinbank, J. D., Szalay, A., Takacs, P., Tether, S. A., Thaler, J. J., Thayer, J. G., Thomas, S., Thornton, A. J., Thukral, V., Tice, J., Trilling, D. E., Turri, M., Van Berg, R., Vanden Berk, D., Vetter, K., Virieux, F., Vucina, T., Wahl, W., Walkowicz, L., Walsh, B., Walter, C. W., Wang, D. L., Wang, S.-Y., Warner, M., Wiecha, O., Willman, B., Winters, S. E., Wittman, D., Wolff, S. C., Wood-Vasey, W. M., Wu, X., Xin, B., Yoachim, P., and Zhan, H., "LSST: From Science Drivers to Reference Design and Anticipated Data Products," *ApJ* **873**, 111 (Mar 2019). DOI: <https://doi.org/10.3847/1538-4357/ab042c>.

## APPENDIX B. ACRONYMS

Acronym	Description
AST	NSF Division of Astronomical Sciences
AURA	Association of Universities for Research in Astronomy
DE	dark energy
SLAC	SLAC National Accelerator Laboratory

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