

NET UCAC-4

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|---|--------|----|----------|----|----|-------|-----|----|------|--------|-------------------|
| 0029P | KC2020 | 05 | 22.41788 | 02 | 04 | 43.41 | +21 | 08 | 36.0 | 15.90R | W96 5.6" 0.4-m |
| 0029P | KC2020 | 05 | 22.42008 | 02 | 04 | 43.53 | +21 | 08 | 37.3 | 15.85R | W96 |
| 0029P | KC2020 | 05 | 22.42228 | 02 | 04 | 43.42 | +21 | 08 | 40.1 | 15.87R | W96 |
| 0029P | KC2020 | 06 | 07.07705 | 02 | 16 | 23.87 | +22 | 18 | 32.2 | 16.12R | C10 6.5" 0.3-m |
| 0029P | KC2020 | 06 | 07.08480 | 02 | 16 | 24.35 | +22 | 18 | 32.7 | 15.95R | C10 |
| 0029P | KC2020 | 06 | 14.07442 | 02 | 21 | 20.22 | +22 | 48 | 44.3 | 15.61R | C10 6.5" 0.3-m |
| 0029P | KC2020 | 06 | 14.07725 | 02 | 21 | 20.33 | +22 | 48 | 45.1 | 15.56R | C10 cirrus cloud |
| 0029P | KC2020 | 06 | 14.08539 | 02 | 21 | 20.67 | +22 | 48 | 47.8 | 15.60R | C10 |
| 0029P f/3.5 | KC2020 | 06 | 15.08773 | 02 | 22 | 02.10 | +22 | 53 | 02.6 | 15.81R | 204 26x10s 0.84-m |
| 0029P | C2020 | 06 | 18.60516 | 02 | 24 | 25.30 | +23 | 07 | 53.0 | 16.53R | T04 5.7" 0.4-m |
| 0029P | C2020 | 06 | 18.60670 | 02 | 24 | 25.35 | +23 | 07 | 53.6 | 16.44R | T04 |
| 0029P | C2020 | 06 | 19.60665 | 02 | 25 | 05.40 | +23 | 12 | 04.6 | 16.69R | T04 5.7" 0.4-m |
| 0029P | KC2020 | 06 | 20.07273 | 02 | 25 | 23.91 | +23 | 14 | 00.2 | 16.64R | 204 25x15s 0.84-m |
| 0029P f/3.5 | KC2020 | 06 | 20.07850 | 02 | 25 | 24.13 | +23 | 14 | 01.9 | 16.55R | 204 |
| 0029P | C2020 | 06 | 20.60508 | 02 | 25 | 45.07 | +23 | 16 | 12.5 | 16.56R | T04 5.7" 0.4-m |
| 0029P | C2020 | 06 | 20.60662 | 02 | 25 | 45.12 | +23 | 16 | 13.9 | 16.35R | T04 |
| 0029P f/3.5 | KC2020 | 06 | 22.07894 | 02 | 26 | 43.05 | +23 | 22 | 19.1 | 16.31R | 204 5.6" 0.84-m |
| 0029P | KC2020 | 06 | 22.08472 | 02 | 26 | 43.25 | +23 | 22 | 20.3 | 16.30R | 204 |
| 0029P | C2020 | 06 | 23.59621 | 02 | 27 | 42.07 | +23 | 28 | 33.5 | 16.45R | T04 5.7" 0.4-m |
| **mini-outburst at 2020 06 23.84 +/-0.19 16.40R => 15.65R | | | | | | | | | | | |
| 0029P f/3.5 | KC2020 | 06 | 24.07323 | 02 | 28 | 00.45 | +23 | 30 | 30.3 | 15.62R | 204 5.6" 0.84-m |
| 0029P | KC2020 | 06 | 24.07898 | 02 | 28 | 00.66 | +23 | 30 | 31.7 | 15.67R | 204 |
| 0029P | C2020 | 06 | 25.20927 | 02 | 28 | 43.91 | +23 | 35 | 08.5 | 15.87R | Z21 5.7" 0.4-m |
| 0029P | C2020 | 06 | 25.21082 | 02 | 28 | 44.00 | +23 | 35 | 08.5 | 15.82R | Z21 |
| 0029P | C2020 | 06 | 26.21197 | 02 | 29 | 21.99 | +23 | 39 | 12.4 | 16.06R | Z21 5.7" 0.4-m |
| 0029P | C2020 | 06 | 26.21354 | 02 | 29 | 22.06 | +23 | 39 | 12.6 | 16.01R | Z21 |
| 0029P | KC2020 | 06 | 28.07378 | 02 | 30 | 31.69 | +23 | 46 | 41.4 | 16.11R | 204 5.6" 0.84-m |
| 0029P | KC2020 | 06 | 28.07838 | 02 | 30 | 31.85 | +23 | 46 | 42.5 | 16.07R | 204 |
| 0029P | C2020 | 06 | 29.18874 | 02 | 31 | 12.81 | +23 | 51 | 10.9 | 16.52R | L09 5.7" 0.4-m |
| 0029P | C2020 | 06 | 29.19023 | 02 | 31 | 12.82 | +23 | 51 | 11.0 | 16.51R | L09 |
| 0029P | C2020 | 06 | 29.19172 | 02 | 31 | 12.92 | +23 | 51 | 11.8 | 16.40R | L09 |
| 0029P | C2020 | 06 | 29.83428 | 02 | 31 | 36.39 | +23 | 53 | 44.8 | 16.46R | Q64 5.5" 1.0-m |
| 0029P | C2020 | 06 | 29.83563 | 02 | 31 | 36.45 | +23 | 53 | 45.2 | 16.57R | Q64 |
| 0029P | C2020 | 06 | 30.18847 | 02 | 31 | 49.32 | +23 | 55 | 08.9 | 16.53R | L09 5.7" 0.4-m |
| 0029P | C2020 | 06 | 30.18996 | 02 | 31 | 49.35 | +23 | 55 | 09.9 | 16.47R | L09 |
| 0029P | C2020 | 06 | 30.19145 | 02 | 31 | 49.40 | +23 | 55 | 09.6 | 16.51R | L09 |
| 0029P | C2020 | 06 | 30.82538 | 02 | 32 | 12.41 | +23 | 57 | 39.9 | 16.67R | Q59 5.7" 0.4-m |
| 0029P | C2020 | 06 | 30.82695 | 02 | 32 | 12.42 | +23 | 57 | 40.4 | 16.57R | Q59 |
| 0029P | C2020 | 06 | 30.83283 | 02 | 32 | 12.63 | +23 | 57 | 42.0 | 16.63R | Q63 5.5" 1.0-m |
| 0029P | C2020 | 06 | 30.83418 | 02 | 32 | 12.67 | +23 | 57 | 42.3 | 16.64R | Q63 |
| 0029P | C2020 | 07 | 01.82415 | 02 | 32 | 48.25 | +24 | 01 | 36.2 | 16.80R | Q64 5.5" 1.0-m |
| 0029P | C2020 | 07 | 01.82586 | 02 | 32 | 48.32 | +24 | 01 | 36.4 | 16.80R | Q64 |
| 0029P | C2020 | 07 | 02.57544 | 02 | 33 | 15.14 | +24 | 04 | 32.0 | 16.82R | T03 5.7" 0.4-m |
| 0029P | C2020 | 07 | 02.57698 | 02 | 33 | 15.08 | +24 | 04 | 31.7 | 16.76R | T03 |
| 0029P | C2020 | 07 | 02.57853 | 02 | 33 | 15.14 | +24 | 04 | 32.2 | 16.71R | T03 |
| 0029P | C2020 | 07 | 03.57396 | 02 | 33 | 50.30 | +24 | 08 | 24.8 | 16.80R | T03 5.7" 0.4-m |
| 0029P | C2020 | 07 | 03.57551 | 02 | 33 | 50.32 | +24 | 08 | 25.5 | 16.69R | T03 |
| 0029P | C2020 | 07 | 03.57705 | 02 | 33 | 50.31 | +24 | 08 | 25.6 | 16.63R | T03 |
| 0029P | C2020 | 07 | 03.57860 | 02 | 33 | 50.41 | +24 | 08 | 26.0 | 16.72R | T03 |

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|----------|--------|----|----------|----|----|-------|-----|----|------|--------|--------------------|
| 0029P | dC2020 | 07 | 04.46706 | 02 | 34 | 21.42 | +24 | 11 | 52.6 | 16.68R | XXX 4.84" C. S. |
| Morris | | | | | | | | | | | |
| 0029P | dC2020 | 07 | 04.47035 | 02 | 34 | 21.53 | +24 | 11 | 53.6 | 16.69R | C. S. Morris 4.84" |
| 0029P | dC2020 | 07 | 04.47676 | 02 | 34 | 21.73 | +24 | 11 | 54.6 | 16.60R | C. S. Morris 4.84" |
| 0029P | dC2020 | 07 | 04.48025 | 02 | 34 | 21.86 | +24 | 11 | 55.5 | 16.77R | C. S. Morris 4.84" |
| 0029P | KC2020 | 07 | 05.07009 | 02 | 34 | 42.26 | +24 | 14 | 11.9 | 16.65R | 204 5.6" 0.84-m |
| 0029P | KC2020 | 07 | 05.07584 | 02 | 34 | 42.45 | +24 | 14 | 13.3 | 16.69R | 204 |
| 0029P | KC2020 | 07 | 06.07245 | 02 | 35 | 16.62 | +24 | 18 | 02.9 | 16.64R | 204 5.6" 0.84-m |
| 0029P | KC2020 | 07 | 06.07820 | 02 | 35 | 16.81 | +24 | 18 | 04.5 | 16.72R | 204 |
| 0029P | dC2020 | 07 | 06.45174 | 02 | 35 | 29.56 | +24 | 19 | 30.3 | 16.87R | XXX 4.84" C. S. |
| Morris | | | | | | | | | | | |
| 0029P | dC2020 | 07 | 06.45542 | 02 | 35 | 29.70 | +24 | 19 | 30.9 | 16.84R | C. S. Morris 4.84" |
| 0029P | dC2020 | 07 | 06.45885 | 02 | 35 | 29.81 | +24 | 19 | 32.1 | 16.80R | C. S. Morris 4.84" |
| 0029P | dC2020 | 07 | 06.46135 | 02 | 35 | 29.88 | +24 | 19 | 32.7 | 16.85R | C. S. Morris 4.84" |
| 0029P | C2020 | 07 | 06.56634 | 02 | 35 | 33.39 | +24 | 19 | 57.3 | 16.75R | T03 5.7" 0.4-m |
| 0029P | C2020 | 07 | 06.56790 | 02 | 35 | 33.49 | +24 | 19 | 57.6 | 16.82R | T03 |
| 0029P | C2020 | 07 | 06.56944 | 02 | 35 | 33.51 | +24 | 19 | 56.9 | 16.91R | T03 |
| 0029P | C2020 | 07 | 06.57099 | 02 | 35 | 33.60 | +24 | 19 | 58.1 | 16.70R | T03 |
| 0029P | C2020 | 07 | 06.82630 | 02 | 35 | 42.19 | +24 | 20 | 57.7 | 16.85R | Q64 5.5" 1.0-m |
| 0029P | C2020 | 07 | 06.82800 | 02 | 35 | 42.25 | +24 | 20 | 58.1 | 16.88R | Q64 |
| 0029P | KC2020 | 07 | 07.03794 | 02 | 35 | 49.37 | +24 | 21 | 43.3 | 16.51N | C10 6.5" 0.3-m |
| 0029P | KC2020 | 07 | 07.06754 | 02 | 35 | 50.35 | +24 | 21 | 50.9 | 16.62N | C10 |
| 0029P | KC2020 | 07 | 07.09486 | 02 | 35 | 51.29 | +24 | 21 | 56.9 | 16.69N | C10 |
| 0029P | dC2020 | 07 | 07.44238 | 02 | 36 | 02.95 | +24 | 23 | 17.0 | 16.81R | XXX 4.84" C. S. |
| Morris | | | | | | | | | | | |
| 0029P | dC2020 | 07 | 07.44771 | 02 | 36 | 03.14 | +24 | 23 | 18.3 | 16.86R | C. S. Morris 4.84" |
| 0029P | dC2020 | 07 | 07.45020 | 02 | 36 | 03.21 | +24 | 23 | 18.5 | 16.85R | C. S. Morris 4.84" |
| 0029P | dC2020 | 07 | 07.45291 | 02 | 36 | 03.34 | +24 | 23 | 19.5 | 16.93R | C. S. Morris 4.84" |
| 0029P | C2020 | 07 | 07.57467 | 02 | 36 | 07.45 | +24 | 23 | 46.2 | 16.61R | T03 5.7" 0.4-m |
| 0029P | C2020 | 07 | 07.57622 | 02 | 36 | 07.43 | +24 | 23 | 47.7 | 16.89R | T03 |
| 0029P | C2020 | 07 | 07.57776 | 02 | 36 | 07.50 | +24 | 23 | 48.0 | 16.98R | T03 |
| 0029P | KC2020 | 07 | 08.02085 | 02 | 36 | 22.31 | +24 | 25 | 28.1 | 16.79N | C10 6.5" 0.3-m |
| 0029P | KC2020 | 07 | 08.04954 | 02 | 36 | 23.29 | +24 | 25 | 34.3 | 16.78N | C10 |
| 0029P | KC2020 | 07 | 08.08289 | 02 | 36 | 24.33 | +24 | 25 | 42.1 | 16.64N | C10 |
| 0029P | C2020 | 07 | 08.41754 | 02 | 36 | 35.50 | +24 | 26 | 58.2 | 16.99R | V38 5.7" 0.4-m |
| 0029P | C2020 | 07 | 08.41903 | 02 | 36 | 35.46 | +24 | 26 | 59.1 | 17.11R | V38 |
| 0029P | C2020 | 07 | 08.42051 | 02 | 36 | 35.58 | +24 | 26 | 59.3 | 16.87R | V38 |
| 0029P | C2020 | 07 | 08.42203 | 02 | 36 | 35.60 | +24 | 26 | 59.6 | 17.05R | V38 |
| 0029P | dC2020 | 07 | 08.44381 | 02 | 36 | 36.36 | +24 | 27 | 04.4 | 17.20R | XXX 4.84" C. S. |
| Morris | | | | | | | | | | | |
| 0029P | dC2020 | 07 | 08.45422 | 02 | 36 | 36.68 | +24 | 27 | 06.8 | 17.09R | C. S. Morris 4.84" |
| 0029P | KC2020 | 07 | 09.18122 | 02 | 37 | 00.66 | +24 | 29 | 51.6 | 17.07R | Z17 5.7" 0.4-m |
| 0029P | C2020 | 07 | 09.41981 | 02 | 37 | 08.51 | +24 | 30 | 44.5 | 16.98R | V38 5.7" 0.4-m |
| 0029P | C2020 | 07 | 10.56343 | 02 | 37 | 45.63 | +24 | 35 | 01.6 | 16.99R | T04 5.7" 0.4-m |
| 0029P | C2020 | 07 | 10.56497 | 02 | 37 | 45.68 | +24 | 35 | 01.8 | 16.81R | T04 |
| 0029P | C2020 | 07 | 10.56652 | 02 | 37 | 45.73 | +24 | 35 | 02.4 | 17.07R | T04 |
| 0029P | C2020 | 07 | 10.56806 | 02 | 37 | 45.74 | +24 | 35 | 02.6 | 16.93R | T04 |
| 0029P | KC2020 | 07 | 10.67284 | 02 | 37 | 49.14 | +24 | 35 | 27.5 | 17.29V | E94 ? |
| 0029P | KC2020 | 07 | 10.71401 | 02 | 37 | 50.45 | +24 | 35 | 36.6 | 17.44V | E94 ? |
| 0029P | KC2020 | 07 | 10.74526 | 02 | 37 | 51.42 | +24 | 35 | 44.8 | 17.59V | E94 ? |
| 0029P | C2020 | 07 | 10.71402 | 02 | 37 | 50.46 | +24 | 35 | 36.5 | 16.92R | E94 6.1" 0.35-m RM |
| measured | | | | | | | | | | | |
| 0029P | KC2020 | 07 | 11.03895 | 02 | 38 | 00.86 | +24 | 36 | 47.3 | 17.00N | C10 6.5" 0.3-m |
| 0029P | KC2020 | 07 | 11.06020 | 02 | 38 | 01.58 | +24 | 36 | 51.2 | 16.76N | C10 |
| 0029P | KC2020 | 07 | 11.08558 | 02 | 38 | 02.39 | +24 | 36 | 58.0 | 16.82N | C10 |
| 0029P | KC2020 | 07 | 11.40943 | 02 | 38 | 12.72 | +24 | 38 | 10.1 | 17.07R | V38 5.7" 0.4-m |
| 0029P | KC2020 | 07 | 11.69743 | 02 | 38 | 21.73 | +24 | 39 | 14.7 | 17.55V | E94 ? |
| 0029P | KC2020 | 07 | 11.71936 | 02 | 38 | 22.59 | +24 | 39 | 19.6 | 17.72V | E94 ? |
| 0029P | KC2020 | 07 | 11.73033 | 02 | 38 | 22.94 | +24 | 39 | 23.6 | 17.18V | E94 ? |

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|--------|-------------------|----|----------|----|----|-------|-----|----|------|--------|-----|--------------|-----------|
| 0029P | KC2020 | 07 | 12.01381 | 02 | 38 | 31.87 | +24 | 40 | 23.4 | 16.93N | C10 | 6.5" | 0.3-m |
| 0029P | KC2020 | 07 | 12.04551 | 02 | 38 | 32.86 | +24 | 40 | 30.3 | 16.84N | C10 | | |
| 0029P | KC2020 | 07 | 12.07777 | 02 | 38 | 33.92 | +24 | 40 | 37.6 | 16.81N | C10 | | |
| 0029P | KC2020 | 07 | 12.07638 | 02 | 38 | 33.88 | +24 | 40 | 37.6 | 16.96R | 204 | 5.6" | 0.84-m |
| 0029P | KC2020 | 07 | 12.07893 | 02 | 38 | 33.95 | +24 | 40 | 38.1 | 16.90R | 204 | | |
| 0029P | C2020 | 07 | 12.55457 | 02 | 38 | 48.93 | +24 | 42 | 23.9 | 17.01R | T04 | 5.7" | 0.4-m |
| 0029P | C2020 | 07 | 12.55611 | 02 | 38 | 48.99 | +24 | 42 | 24.3 | 16.94R | T04 | | |
| 0029P | C2020 | 07 | 12.55765 | 02 | 38 | 49.04 | +24 | 42 | 24.5 | 16.99R | T04 | | |
| 0029P | KC2020 | 07 | 13.01208 | 02 | 39 | 03.22 | +24 | 44 | 04.2 | 16.89R | C10 | 6.5" | 0.3-m |
| 0029P | KC2020 | 07 | 13.04310 | 02 | 39 | 04.18 | +24 | 44 | 10.7 | 16.87R | C10 | | |
| 0029P | KC2020 | 07 | 13.07645 | 02 | 39 | 05.20 | +24 | 44 | 18.1 | 16.89R | C10 | | |
| 0029P | dC2020 | 07 | 13.46248 | 02 | 39 | 17.20 | +24 | 45 | 43.1 | 17.33R | XXX | 4.84" | C. S. |
| 0029P | Morris | | | | | | | | | | | | |
| 0029P | dC2020 | 07 | 13.46625 | 02 | 39 | 17.33 | +24 | 45 | 44.0 | 16.98R | | C. S. Morris | 4.84" |
| 0029P | dc2020 | 07 | 13.47381 | 02 | 39 | 17.54 | +24 | 45 | 45.6 | 17.11R | | C. S. Morris | 4.84" |
| 0029P | C2020 | 07 | 13.55302 | 02 | 39 | 20.01 | +24 | 46 | 02.8 | 16.90R | T04 | 5.7" | 0.4-m |
| 0029P | C2020 | 07 | 13.55460 | 02 | 39 | 20.10 | +24 | 46 | 03.1 | 16.98R | T04 | | |
| 0029P | C2020 | 07 | 13.55614 | 02 | 39 | 20.03 | +24 | 46 | 04.1 | 17.08R | T04 | | |
| 0029P | C2020 | 07 | 13.55769 | 02 | 39 | 20.10 | +24 | 46 | 04.7 | 17.09R | T04 | | |
| 0029P | KC2020 | 07 | 16.04462 | 02 | 40 | 35.58 | +24 | 55 | 03.3 | 17.19R | 204 | 5.6" | sky clear |
| 0029P | KC2020 | 07 | 16.06462 | 02 | 40 | 36.16 | +24 | 55 | 07.6 | 17.29R | 204 | | cirrus |
| 0029P | C2020 | 07 | 17.15725 | 02 | 41 | 08.34 | +24 | 59 | 03.0 | 17.24R | L09 | 5.7" | 0.4-m |
| 0029P | C2020 | 07 | 17.15873 | 02 | 41 | 08.40 | +24 | 59 | 04.2 | 17.19R | L09 | | |
| 0029P | C2020 | 07 | 17.16022 | 02 | 41 | 08.47 | +24 | 59 | 04.1 | 17.15R | L09 | | |
| 0029P | C2020 | 07 | 17.16171 | 02 | 41 | 08.51 | +24 | 59 | 04.6 | 17.34R | L09 | | |
| 0029P | C2020 | 07 | 17.55162 | 02 | 41 | 20.01 | +25 | 00 | 26.3 | 17.28R | T04 | 5.7" | 0.4-m |
| 0029P | C2020 | 07 | 17.55317 | 02 | 41 | 19.95 | +25 | 00 | 26.8 | 17.13R | T04 | | |
| 0029P | C2020 | 07 | 17.55471 | 02 | 41 | 19.98 | +25 | 00 | 27.3 | 17.31R | T04 | | |
| 0029P | C2020 | 07 | 17.55626 | 02 | 41 | 20.02 | +25 | 00 | 27.6 | 17.22R | T04 | | |
| 0029P | KC2020 | 07 | 17.97997 | 02 | 41 | 32.27 | +25 | 01 | 57.2 | 16.84R | C10 | 6.5" | 0.3-m |
| 0029P | KC2020 | 07 | 18.04397 | 02 | 41 | 34.11 | +25 | 02 | 10.2 | 16.95R | C10 | | |
| 0029P | KC2020 | 07 | 18.10509 | 02 | 41 | 35.83 | +25 | 02 | 23.7 | 16.88R | C10 | | |
| 0029P | C2020 | 07 | 18.54536 | 02 | 41 | 48.50 | +25 | 03 | 57.7 | 17.16R | F65 | 5.1" | 2.0-m |
| 0029P | check calibration | | | | | | | | | | | | |
| 0029P | C2020 | 07 | 18.54536 | 02 | 41 | 48.52 | +25 | 03 | 57.8 | 17.53R | F65 | 1.8" | |
| 0029P | C2020 | 07 | 18.54694 | 02 | 41 | 48.56 | +25 | 03 | 58.0 | 17.14R | F65 | 5.1" | |
| 0029P | C2020 | 07 | 18.54852 | 02 | 41 | 48.59 | +25 | 03 | 58.3 | 17.17R | F65 | 5.1" | |
| 0029P | C2020 | 07 | 18.79264 | 02 | 41 | 55.45 | +25 | 04 | 51.1 | 17.22R | Q59 | 5.7" | 0.4-m |
| 0029P | C2020 | 07 | 18.79420 | 02 | 41 | 55.56 | +25 | 04 | 50.7 | 17.12R | Q59 | | |
| 0029P | C2020 | 07 | 18.79579 | 02 | 41 | 55.60 | +25 | 04 | 51.5 | 17.05R | Q59 | | |
| 0029P | C2020 | 07 | 18.79735 | 02 | 41 | 55.64 | +25 | 04 | 52.1 | 17.16R | Q59 | | |
| 0029P | KC2020 | 07 | 18.98181 | 02 | 42 | 00.91 | +25 | 05 | 28.9 | 16.89R | C10 | 6.5" | 0.3-m |
| 0029P | KC2020 | 07 | 19.04661 | 02 | 42 | 02.71 | +25 | 05 | 41.9 | 17.11R | C10 | | |
| 0029P | KC2020 | 07 | 19.10779 | 02 | 42 | 04.46 | +25 | 05 | 55.0 | 16.99R | C10 | | |
| 0029P | KC2020 | 07 | 19.09325 | 02 | 42 | 04.05 | +25 | 05 | 51.9 | 17.15R | 204 | 5.6" | |
| 0029P | KC2020 | 07 | 19.09730 | 02 | 42 | 04.16 | +25 | 05 | 52.8 | 17.10R | 204 | | |
| 0029P | C2020 | 07 | 19.55532 | 02 | 42 | 17.09 | +25 | 07 | 29.5 | 17.19R | T04 | 5.7" | 4 x 120s |
| 0029P | stack | | | | | | | | | | | | |
| 0029P | C2020 | 07 | 19.55299 | 02 | 42 | 17.02 | +25 | 07 | 28.9 | 17.19R | T04 | | |
| 0029P | C2020 | 07 | 19.55456 | 02 | 42 | 17.07 | +25 | 07 | 29.5 | 17.16R | T04 | | |
| 0029P | C2020 | 07 | 19.55610 | 02 | 42 | 17.11 | +25 | 07 | 29.7 | 17.07R | T04 | | |
| 0029P | C2020 | 07 | 19.55765 | 02 | 42 | 17.14 | +25 | 07 | 29.8 | 17.35R | T04 | | |
| 0029P | C2020 | 07 | 19.57826 | 02 | 42 | 17.72 | +25 | 07 | 34.5 | 17.20R | F65 | 5.4" | |
| 0029P | C2020 | 07 | 19.57984 | 02 | 42 | 17.77 | +25 | 07 | 34.9 | 17.19R | F65 | | |
| 0029P | C2020 | 07 | 19.58142 | 02 | 42 | 17.82 | +25 | 07 | 35.1 | 17.16R | F65 | | |
| 0029P | C2020 | 07 | 19.58300 | 02 | 42 | 17.85 | +25 | 07 | 35.6 | 17.15R | F65 | | |
| 0029PN | C2020 | 07 | 19.57826 | 02 | 42 | 17.72 | +25 | 07 | 34.6 | 17.62R | F65 | 1.8" | |
| 0029PN | C2020 | 07 | 19.57984 | 02 | 42 | 17.78 | +25 | 07 | 34.9 | 17.63R | F65 | | |
| 0029PN | C2020 | 07 | 19.58142 | 02 | 42 | 17.81 | +25 | 07 | 35.3 | 17.59R | F65 | | |
| 0029PN | C2020 | 07 | 19.58300 | 02 | 42 | 17.85 | +25 | 07 | 35.5 | 17.59R | F65 | | |

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|---|--------|----|----------|----|----|-------|-----|----|------|--------|---------------------------------|
| 0029P | C2020 | 07 | 20.55162 | 02 | 42 | 44.75 | +25 | 10 | 57.9 | 17.16R | T04 5.7" |
| 0029P | C2020 | 07 | 20.55316 | 02 | 42 | 44.82 | +25 | 10 | 57.6 | 17.10R | T04 |
| 0029P | C2020 | 07 | 20.55471 | 02 | 42 | 44.87 | +25 | 10 | 57.8 | 17.15R | T04 |
| 0029P | C2020 | 07 | 20.55625 | 02 | 42 | 44.92 | +25 | 10 | 58.3 | 17.15R | T04 |
| 0029P | KC2020 | 07 | 20.98667 | 02 | 42 | 56.75 | +25 | 12 | 26.5 | 17.28R | C10 6.5" |
| 0029P | KC2020 | 07 | 21.04283 | 02 | 42 | 58.24 | +25 | 12 | 38.3 | 17.18R | C10 |
| 0029P | KC2020 | 07 | 21.10404 | 02 | 42 | 59.89 | +25 | 12 | 51.2 | 17.07R | C10 |
| 0029P | KC2020 | 07 | 20.99981 | 02 | 42 | 57.09 | +25 | 12 | 29.4 | 17.29R | J77 5.4" r filter |
| 0029P | KC2020 | 07 | 21.00698 | 02 | 42 | 57.24 | +25 | 12 | 30.5 | 17.43R | J77 |
| 0029P | KC2020 | 07 | 21.01413 | 02 | 42 | 57.44 | +25 | 12 | 31.7 | 17.35R | J77 |
| 0029P | KC2020 | 07 | 21.02128 | 02 | 42 | 57.68 | +25 | 12 | 33.5 | 17.27R | J77 |
| 0029P | KC2020 | 07 | 21.01413 | 02 | 42 | 57.46 | +25 | 12 | 31.7 | 17.31R | J77 5.4" 30x60s r filter 0.35-m |
| 0029P | KC2020 | 07 | 21.09488 | 02 | 42 | 59.65 | +25 | 12 | 49.8 | 17.06R | 204 5.6" 17.05R |
| remeasured | | | | | | | | | | | |
| 0029P | KC2020 | 07 | 21.09792 | 02 | 42 | 59.74 | +25 | 12 | 50.1 | 17.09R | 204 |
| 0029P | C2020 | 07 | 21.53260 | 02 | 43 | 11.59 | +25 | 14 | 20.6 | 17.23R | F65 5.4" |
| 0029P | C2020 | 07 | 21.53418 | 02 | 43 | 11.61 | +25 | 14 | 20.8 | 17.24R | F65 |
| 0029P | C2020 | 07 | 21.53576 | 02 | 43 | 11.65 | +25 | 14 | 21.1 | 17.26R | F65 |
| 0029P | C2020 | 07 | 21.53734 | 02 | 43 | 11.72 | +25 | 14 | 21.6 | 17.26R | F65 |
| 0029P | C2020 | 07 | 21.55161 | 02 | 43 | 12.15 | +25 | 14 | 23.9 | 17.28R | T04 5.7" |
| 0029P | C2020 | 07 | 21.55471 | 02 | 43 | 12.18 | +25 | 14 | 24.8 | 17.32R | T04 |
| 0029P | C2020 | 07 | 21.55625 | 02 | 43 | 12.22 | +25 | 14 | 25.2 | 17.30R | T04 |
| 0029P | KC2020 | 07 | 22.00530 | 02 | 43 | 24.25 | +25 | 15 | 56.6 | 17.10R | C10 6.5" |
| 0029P | KC2020 | 07 | 22.04080 | 02 | 43 | 25.26 | +25 | 16 | 03.9 | 17.04R | C10 |
| 0029P | KC2020 | 07 | 22.10718 | 02 | 43 | 27.03 | +25 | 16 | 17.3 | 17.16R | C10 |
| 0029P | KC2020 | 07 | 22.02301 | 02 | 43 | 24.78 | +25 | 16 | 00.2 | 17.26R | J77 5.4" r filter |
| 0029P | KC2020 | 07 | 22.03769 | 02 | 43 | 25.18 | +25 | 16 | 03.1 | 17.17R | J77 |
| 0029P | KC2020 | 07 | 22.06455 | 02 | 43 | 25.89 | +25 | 16 | 08.9 | 17.22R | J77 |
| 0029P | C2020 | 07 | 22.03951 | 02 | 43 | 25.22 | +25 | 16 | 04.0 | 16.6 R | I81 5.25" need |
| remeasuring | | | | | | | | | | | |
| 0029P | C2020 | 07 | 22.04288 | 02 | 43 | 25.29 | +25 | 16 | 04.4 | 16.5 R | I81 |
| 0029P | C2020 | 07 | 22.04439 | 02 | 43 | 25.54 | +25 | 16 | 02.4 | 16.9 R | I81 |
| 0029P | C2020 | 07 | 22.55313 | 02 | 43 | 38.91 | +25 | 17 | 49.7 | 17.25R | T04 5.7" |
| 0029P | C2020 | 07 | 22.55467 | 02 | 43 | 38.96 | +25 | 17 | 49.9 | 17.04R | T04 |
| 0029P | C2020 | 07 | 22.55622 | 02 | 43 | 38.98 | +25 | 17 | 50.3 | 17.32R | T04 |
| 0029P | C2020 | 07 | 22.55776 | 02 | 43 | 39.04 | +25 | 17 | 50.7 | 17.09R | T04 |
| **mini-outburst at 2020 07 22.77 +/-0.17 17.25R => 16.97R | | | | | | | | | | | |
| 0029P | KC2020 | 07 | 22.97943 | 02 | 43 | 50.16 | +25 | 19 | 15.6 | 16.84R | C10 6.5" cirrus |
| 0029P | KC2020 | 07 | 23.04350 | 02 | 43 | 51.83 | +25 | 19 | 28.6 | 16.98R | C10 |
| 0029P | KC2020 | 07 | 23.10876 | 02 | 43 | 53.53 | +25 | 19 | 42.2 | 16.96R | C10 |
| 0029P | KC2020 | 07 | 23.05546 | 02 | 43 | 52.17 | +25 | 19 | 31.3 | 17.16R | 204 5.6" was |
| 17.19R, remeasured by LB | | | | | | | | | | | |
| 0029P | KC2020 | 07 | 23.059 | | | | | | | 16.94R | 204 5.6" cirrus |
| 0029P | C2020 | 07 | 23.55162 | 02 | 44 | 05.13 | +25 | 21 | 12.8 | 16.99R | T04 5.7" |
| 0029P | C2020 | 07 | 23.55316 | 02 | 44 | 05.18 | +25 | 21 | 13.0 | 17.04R | T04 |
| 0029P | C2020 | 07 | 23.55625 | 02 | 44 | 05.27 | +25 | 21 | 13.6 | 17.07R | T04 |
| 0029P | C2020 | 07 | 24.60723 | 02 | 44 | 32.29 | +25 | 24 | 45.6 | 16.96R | T04 5.7" |
| 0029P | C2020 | 07 | 24.60878 | 02 | 44 | 32.32 | +25 | 24 | 46.0 | 16.95R | T04 |
| 0029P | C2020 | 07 | 24.61033 | 02 | 44 | 32.36 | +25 | 24 | 46.1 | 16.99R | T04 |
| 0029P | C2020 | 07 | 24.61187 | 02 | 44 | 32.39 | +25 | 24 | 46.4 | 16.97R | T04 |
| 0029P | KC2020 | 07 | 24.69093 | 02 | 44 | 34.36 | +25 | 25 | 03.2 | 16.8 R | E94 6.1" 5x60s |
| 0029P | KC2020 | 07 | 24.69552 | 02 | 44 | 34.49 | +25 | 25 | 03.5 | 16.7 R | E94 |
| 0029P | KC2020 | 07 | 24.70091 | 02 | 44 | 34.67 | +25 | 25 | 05.3 | 16.9 R | E94 |
| 0029P | KC2020 | 07 | 24.70550 | 02 | 44 | 34.73 | +25 | 25 | 05.8 | 17.0 R | E94 |
| 0029P | KC2020 | 07 | 24.70550 | 02 | 44 | 34.74 | +25 | 25 | 05.8 | 16.98R | E94 6.1" RM |
| measured | | | | | | | | | | | |
| 0029P | KC2020 | 07 | 25.05852 | 02 | 44 | 43.73 | +25 | 26 | 15.2 | 16.90R | 204 5.6" |
| 0029P | KC2020 | 07 | 25.09154 | 02 | 44 | 44.55 | +25 | 26 | 21.7 | 16.91R | 204 |

| | | | | | | | | | | | |
|--|--------|----|----------|----|----|-------|-----|----|------|--------|---------------------|
| 0029P | C2020 | 07 | 25.55299 | 02 | 44 | 56.13 | +25 | 27 | 54.3 | 17.21R | T03 5.7" |
| 0029P | C2020 | 07 | 25.55453 | 02 | 44 | 56.17 | +25 | 27 | 54.4 | 17.25R | T03 |
| 0029P | C2020 | 07 | 25.55607 | 02 | 44 | 56.21 | +25 | 27 | 54.9 | 17.31R | T03 |
| 0029P | C2020 | 07 | 25.55762 | 02 | 44 | 56.25 | +25 | 27 | 55.2 | 17.42R | T03 |
| 0029P | C2020 | 07 | 25.55299 | 02 | 44 | 56.13 | +25 | 27 | 54.3 | 17.18R | T03 5.7" raw images |
| 0029P analysed | | | | | | | | | | | |
| 0029P | C2020 | 07 | 25.55453 | 02 | 44 | 56.17 | +25 | 27 | 54.5 | 17.25R | T03 |
| 0029P | C2020 | 07 | 25.55607 | 02 | 44 | 56.21 | +25 | 27 | 54.9 | 17.31R | T03 |
| 0029P | C2020 | 07 | 25.55762 | 02 | 44 | 56.25 | +25 | 27 | 55.2 | 17.44R | T03 |
| 0029P | C2020 | 07 | 25.55299 | 02 | 44 | 56.14 | +25 | 27 | 54.3 | 17.51R | T03 2.3" raw images |
| 0029P | C2020 | 07 | 25.55453 | 02 | 44 | 56.17 | +25 | 27 | 54.5 | 17.60R | T03 |
| 0029P | C2020 | 07 | 25.55607 | 02 | 44 | 56.21 | +25 | 27 | 55.0 | 17.59R | T03 |
| 0029P | C2020 | 07 | 25.55762 | 02 | 44 | 56.25 | +25 | 27 | 55.2 | 17.51R | T03 |
| 0029P | C2020 | 07 | 26.13632 | 02 | 45 | 10.54 | +25 | 29 | 50.5 | 17.02R | L09 5.7" |
| 0029P | C2020 | 07 | 26.14079 | 02 | 45 | 10.66 | +25 | 29 | 52.3 | 16.99R | L09 |
| 0029P | KC2020 | 07 | 26.68996 | 02 | 45 | 24.09 | +25 | 31 | 40.0 | 17.08R | E94 6.1" 3x60s |
| 0029P | KC2020 | 07 | 26.73162 | 02 | 45 | 25.07 | +25 | 31 | 48.9 | 16.93R | E94 6.1" field star |
| 0029P | KC2020 | 07 | 26.73438 | 02 | 45 | 25.14 | +25 | 31 | 48.8 | 16.88R | E94 6.1" field star |
| 0029P | KC2020 | 07 | 26.73438 | 02 | 45 | 25.25 | +25 | 31 | 47.8 | 17.08R | E94 6.1" RM |
| measured | | | | | | | | | | | |
| **outburst at 2020 07 26.89 +/-0.13 17.10R => 12.75R | | | | | | | | | | | |
| 0029P | C2020 | 07 | 27.05333 | 02 | 45 | 32.94 | +25 | 32 | 49.5 | 12.77R | I81 5.25" |
| 0029P | C2020 | 07 | 27.05406 | 02 | 45 | 32.96 | +25 | 32 | 50.1 | 12.74R | I81 |
| 0029P | C2020 | 07 | 27.05578 | 02 | 45 | 33.00 | +25 | 32 | 50.2 | 12.72R | I81 |
| 0029P | C2020 | 07 | 27.05649 | 02 | 45 | 32.99 | +25 | 32 | 50.2 | 12.75R | I81 |
| 0029P | C2020 | 07 | 27.05722 | 02 | 45 | 33.05 | +25 | 32 | 49.9 | 12.74R | I81 |
| 0029P | C2020 | 07 | 27.05794 | 02 | 45 | 33.06 | +25 | 32 | 50.6 | 12.73R | I81 |
| 0029P | C2020 | 07 | 27.05867 | 02 | 45 | 33.08 | +25 | 32 | 50.6 | 12.75R | I81 |
| 0029P | C2020 | 07 | 27.05939 | 02 | 45 | 33.08 | +25 | 32 | 50.9 | 12.73R | I81 |
| 0029P | C2020 | 07 | 27.06010 | 02 | 45 | 33.10 | +25 | 32 | 51.0 | 12.66R | I81 |
| 0029P | C2020 | 07 | 27.06083 | 02 | 45 | 33.13 | +25 | 32 | 50.9 | 12.75R | I81 |
| 0029P | C2020 | 07 | 27.06155 | 02 | 45 | 33.14 | +25 | 32 | 51.3 | 12.75R | I81 |
| 0029P | C2020 | 07 | 27.06228 | 02 | 45 | 33.16 | +25 | 32 | 51.3 | 12.73R | I81 |
| 0029P | KC2020 | 07 | 27.08380 | 02 | 45 | 33.68 | +25 | 32 | 56.1 | 12.98R | 204 5.6" |
| 0029P | KC2020 | 07 | 27.08645 | 02 | 45 | 33.74 | +25 | 32 | 56.5 | 12.94R | 204 |
| 0029P | KC2020 | 07 | 27.09802 | 02 | 45 | 34.02 | +25 | 32 | 58.9 | 12.96R | 204 |
| 0029P | C2020 | 07 | 27.12904 | 02 | 45 | 34.74 | +25 | 33 | 04.6 | 12.71R | Z10 5.45" |
| 0029P | C2020 | 07 | 27.34254 | 02 | 45 | 39.91 | +25 | 33 | 48.3 | 12.7 R | W96 |
| 0029P | C2020 | 07 | 27.35557 | 02 | 45 | 40.22 | +25 | 33 | 50.5 | 12.6 R | W96 |
| 0029P | C2020 | 07 | 27.36715 | 02 | 45 | 40.50 | +25 | 33 | 52.8 | 12.6 R | W96 |
| 0029P | KC2020 | 07 | 27.68699 | 02 | 45 | 48.21 | +25 | 34 | 55.8 | 12.67R | E94 6.1" out of |
| focus | | | | | | | | | | | |
| 0029P | KC2020 | 07 | 27.70390 | 02 | 45 | 48.61 | +25 | 34 | 58.0 | 13.48R | E94 |
| 0029P | KC2020 | 07 | 27.71813 | 02 | 45 | 48.92 | +25 | 35 | 00.3 | 13.12R | E94 |
| 0029P | C2020 | 07 | 27.97774 | 02 | 45 | 55.00 | +25 | 35 | 49.2 | 12.79R | J77 8.2" max light |
| 0029P | C2020 | 07 | 27.97845 | 02 | 45 | 55.11 | +25 | 35 | 49.4 | 12.81R | J77 |
| 0029P | C2020 | 07 | 27.97917 | 02 | 45 | 55.06 | +25 | 35 | 49.8 | 12.80R | J77 |
| 0029P | C2020 | 07 | 27.97989 | 02 | 45 | 55.07 | +25 | 35 | 49.4 | 12.79R | J77 |
| 0029P | C2020 | 07 | 27.98060 | 02 | 45 | 55.17 | +25 | 35 | 49.8 | 12.80R | J77 |
| 0029P | C2020 | 07 | 27.98132 | 02 | 45 | 55.13 | +25 | 35 | 50.3 | 12.76R | J77 |
| 0029P | C2020 | 07 | 27.98203 | 02 | 45 | 55.17 | +25 | 35 | 50.4 | 12.78R | J77 |
| 0029P | C2020 | 07 | 27.98275 | 02 | 45 | 55.16 | +25 | 35 | 50.5 | 12.81R | J77 |
| 0029P | C2020 | 07 | 27.98346 | 02 | 45 | 55.25 | +25 | 35 | 50.7 | 12.80R | J77 |
| 0029P | C2020 | 07 | 27.98418 | 02 | 45 | 55.24 | +25 | 35 | 50.3 | 12.77R | J77 |
| 0029P | C2020 | 07 | 27.98630 | 02 | 45 | 55.24 | +25 | 35 | 51.5 | 12.75R | J77 8.2" moved |
| field | | | | | | | | | | | |
| 0029P | C2020 | 07 | 27.98702 | 02 | 45 | 55.28 | +25 | 35 | 51.1 | 12.78R | J77 |
| 0029P | C2020 | 07 | 27.98845 | 02 | 45 | 55.28 | +25 | 35 | 51.9 | 12.76R | J77 |
| 0029P | C2020 | 07 | 27.98916 | 02 | 45 | 55.29 | +25 | 35 | 51.8 | 12.76R | J77 |
| 0029P | C2020 | 07 | 27.98988 | 02 | 45 | 55.33 | +25 | 35 | 51.9 | 12.77R | J77 |
| 0029P | C2020 | 07 | 27.99060 | 02 | 45 | 55.41 | +25 | 35 | 52.0 | 12.78R | J77 |
| 0029P | C2020 | 07 | 27.99131 | 02 | 45 | 55.38 | +25 | 35 | 51.9 | 12.76R | J77 |
| 0029P | C2020 | 07 | 27.99203 | 02 | 45 | 55.40 | +25 | 35 | 51.9 | 12.75R | J77 |
| 0029P | C2020 | 07 | 27.99274 | 02 | 45 | 55.36 | +25 | 35 | 52.4 | 12.76R | J77 |

| | | | | | | | | | | | | |
|---------------|--------|----|----------|----|----|-------|-----|----|------|--------|-----|--------------|
| 0029P | C2020 | 07 | 27.99850 | 02 | 45 | 55.55 | +25 | 35 | 53.4 | 13.22V | J77 | 8.2" |
| 0029P | C2020 | 07 | 27.99921 | 02 | 45 | 55.61 | +25 | 35 | 54.0 | 13.22V | J77 | |
| 0029P | C2020 | 07 | 27.99993 | 02 | 45 | 55.58 | +25 | 35 | 53.8 | 13.23V | J77 | |
| 0029P | C2020 | 07 | 28.00064 | 02 | 45 | 55.58 | +25 | 35 | 54.1 | 13.24V | J77 | |
| 0029P | C2020 | 07 | 28.00136 | 02 | 45 | 55.59 | +25 | 35 | 54.7 | 13.21V | J77 | |
| 0029P | C2020 | 07 | 28.00208 | 02 | 45 | 55.61 | +25 | 35 | 54.2 | 13.23V | J77 | |
| 0029P | C2020 | 07 | 28.00279 | 02 | 45 | 55.62 | +25 | 35 | 54.9 | 13.22V | J77 | |
| 0029P | C2020 | 07 | 28.00351 | 02 | 45 | 55.68 | +25 | 35 | 54.6 | 13.24V | J77 | |
| 0029P | C2020 | 07 | 28.01326 | 02 | 45 | 55.89 | +25 | 35 | 56.8 | 14.48B | J77 | 8.2" |
| 0029P | C2020 | 07 | 28.01398 | 02 | 45 | 55.93 | +25 | 35 | 56.6 | 14.47B | J77 | |
| NET USNO-B1.0 | | | | | | | | | | | | |
| 0029P | C2020 | 07 | 28.00500 | 02 | 45 | 55.71 | +25 | 35 | 55.3 | 11.96I | J77 | 8.2" |
| 0029P | C2020 | 07 | 28.00572 | 02 | 45 | 55.76 | +25 | 35 | 55.3 | 11.90I | J77 | |
| 0029P | C2020 | 07 | 28.00643 | 02 | 45 | 55.76 | +25 | 35 | 54.8 | 11.91I | J77 | |
| 0029P | C2020 | 07 | 28.00715 | 02 | 45 | 55.75 | +25 | 35 | 55.3 | 11.95I | J77 | |
| 0029P | C2020 | 07 | 28.00786 | 02 | 45 | 55.81 | +25 | 35 | 55.5 | 11.97I | J77 | |
| 0029P | C2020 | 07 | 27.97774 | 02 | 45 | 54.99 | +25 | 35 | 49.2 | 12.88R | J77 | 5.4" |
| 0029P | C2020 | 07 | 27.97845 | 02 | 45 | 55.12 | +25 | 35 | 49.4 | 12.90R | J77 | |
| 0029P | C2020 | 07 | 27.97917 | 02 | 45 | 55.06 | +25 | 35 | 50.0 | 12.90R | J77 | |
| 0029P | C2020 | 07 | 27.97989 | 02 | 45 | 55.07 | +25 | 35 | 49.4 | 12.91R | J77 | |
| 0029P | C2020 | 07 | 27.98060 | 02 | 45 | 55.16 | +25 | 35 | 49.7 | 12.91R | J77 | |
| 0029P | C2020 | 07 | 27.98132 | 02 | 45 | 55.13 | +25 | 35 | 50.2 | 12.91R | J77 | |
| 0029P | C2020 | 07 | 27.98203 | 02 | 45 | 55.16 | +25 | 35 | 50.4 | 12.89R | J77 | |
| 0029P | C2020 | 07 | 27.98275 | 02 | 45 | 55.24 | +25 | 35 | 50.3 | 12.94R | J77 | |
| 0029P | C2020 | 07 | 27.98346 | 02 | 45 | 55.25 | +25 | 35 | 50.9 | 12.93R | J77 | |
| 0029P | C2020 | 07 | 27.98418 | 02 | 45 | 55.23 | +25 | 35 | 50.2 | 12.87R | J77 | |
| 0029P | C2020 | 07 | 27.98630 | 02 | 45 | 55.17 | +25 | 35 | 51.0 | 12.87R | J77 | 5.4" changed |
| field stars | | | | | | | | | | | | |
| 0029P | C2020 | 07 | 27.98702 | 02 | 45 | 55.27 | +25 | 35 | 51.2 | 12.85R | J77 | |
| 0029P | C2020 | 07 | 27.98773 | 02 | 45 | 55.30 | +25 | 35 | 51.1 | 12.85R | J77 | |
| 0029P | C2020 | 07 | 27.98845 | 02 | 45 | 55.29 | +25 | 35 | 51.9 | 12.85R | J77 | |
| 0029P | C2020 | 07 | 27.98916 | 02 | 45 | 55.29 | +25 | 35 | 51.9 | 12.85R | J77 | |
| 0029P | C2020 | 07 | 27.98988 | 02 | 45 | 55.38 | +25 | 35 | 52.8 | 12.91R | J77 | |
| 0029P | C2020 | 07 | 27.99060 | 02 | 45 | 55.40 | +25 | 35 | 52.0 | 12.85R | J77 | |
| 0029P | C2020 | 07 | 27.99131 | 02 | 45 | 55.38 | +25 | 35 | 51.9 | 12.86R | J77 | |
| 0029P | C2020 | 07 | 27.99203 | 02 | 45 | 55.40 | +25 | 35 | 51.9 | 12.85R | J77 | |
| 0029P | C2020 | 07 | 27.99274 | 02 | 45 | 55.37 | +25 | 35 | 52.4 | 12.85R | J77 | |
| 0029P | C2020 | 07 | 27.95952 | 02 | 45 | 54.63 | +25 | 35 | 46.0 | 12.88R | C10 | 6.5" |
| 0029P | C2020 | 07 | 27.99030 | 02 | 45 | 55.36 | +25 | 35 | 52.0 | 12.84R | C10 | |
| 0029P | C2020 | 07 | 28.02474 | 02 | 45 | 55.16 | +25 | 35 | 58.9 | 12.81R | C10 | |
| 0029P | C2020 | 07 | 28.05799 | 02 | 45 | 56.95 | +25 | 36 | 05.3 | 12.79R | C10 | |
| 0029P | C2020 | 07 | 28.09185 | 02 | 45 | 57.73 | +25 | 36 | 11.9 | 12.79R | C10 | |
| 0029P | KC2020 | 07 | 28.09096 | 02 | 45 | 57.72 | +25 | 36 | 11.9 | 12.90R | 204 | 5.6" |
| 0029P | KC2020 | 07 | 28.09212 | 02 | 45 | 57.75 | +25 | 36 | 12.2 | 12.90R | 204 | |
| 0029P | KC2020 | 07 | 28.09353 | 02 | 45 | 57.78 | +25 | 36 | 12.5 | 12.91R | 204 | |
| 0029P | KC2020 | 07 | 28.09480 | 02 | 45 | 57.82 | +25 | 36 | 12.7 | 12.89R | 204 | |
| 0029P | C2020 | 07 | 28.15528 | 02 | 45 | 59.20 | +25 | 36 | 26.1 | 12.84R | K93 | 5.5" 1.0-m |
| 0029P | C2020 | 07 | 28.15592 | 02 | 45 | 59.24 | +25 | 36 | 26.8 | 12.83R | K93 | |
| 0029P | C2020 | 07 | 28.15657 | 02 | 45 | 59.24 | +25 | 36 | 26.7 | 12.83R | K93 | |
| 0029P | C2020 | 07 | 28.15722 | 02 | 45 | 59.27 | +25 | 36 | 26.8 | 12.83R | K93 | |
| 0029P | C2020 | 07 | 28.58855 | 02 | 46 | 09.38 | +25 | 37 | 49.5 | 12.94R | F65 | 5.4" 2.0-m |
| 0029P | C2020 | 07 | 28.58978 | 02 | 46 | 09.43 | +25 | 37 | 49.7 | 12.94R | F65 | |
| 0029P | C2020 | 07 | 28.59101 | 02 | 46 | 09.43 | +25 | 37 | 50.4 | 12.94R | F65 | |
| 0029P | C2020 | 07 | 28.96288 | 02 | 46 | 18.13 | +25 | 38 | 59.6 | 13.12R | C10 | 6.5" |
| 0029P | C2020 | 07 | 29.00303 | 02 | 46 | 19.05 | +25 | 39 | 07.7 | 13.04R | C10 | |
| 0029P | C2020 | 07 | 29.04211 | 02 | 46 | 19.94 | +25 | 39 | 15.0 | 12.98R | C10 | |
| 0029P | C2020 | 07 | 29.08355 | 02 | 46 | 20.88 | +25 | 39 | 23.1 | 12.98R | C10 | |
| 0029P | C2020 | 07 | 29.12869 | 02 | 46 | 21.90 | +25 | 39 | 31.9 | 13.02R | C10 | |
| 0029P | KC2020 | 07 | 29.08189 | 02 | 46 | 20.85 | +25 | 39 | 23.1 | 13.14R | 204 | 5.6" |
| 0029P | KC2020 | 07 | 29.08419 | 02 | 46 | 20.89 | +25 | 39 | 23.5 | 13.12R | 204 | |
| 0029P | C2020 | 07 | 29.18555 | 02 | 46 | 23.11 | +25 | 39 | 45.2 | 13.24R | K93 | 5.5" 1.0-m |
| 0029P | C2020 | 07 | 29.18620 | 02 | 46 | 23.15 | +25 | 39 | 45.6 | 13.26R | K93 | |
| 0029P | C2020 | 07 | 29.18685 | 02 | 46 | 23.17 | +25 | 39 | 45.1 | 13.22R | K93 | |
| 0029P | C2020 | 07 | 29.18750 | 02 | 46 | 23.21 | +25 | 39 | 45.7 | 13.22R | K93 | |
| 0029P | C2020 | 07 | 29.54309 | 02 | 46 | 31.42 | +25 | 40 | 53.0 | 13.52R | F65 | 5.4" |

| | | | | | | | | | | | | | |
|--------|--------|--------|----------|----------|----|-------|-------|-----|------|--------|--------------|--------------|-------|
| 0029P | C2020 | 07 | 29.95148 | 02 | 46 | 40.71 | +25 | 42 | 08.7 | 13.51R | C10 | 6.5" Red J/C | |
| 0029P | C2020 | 07 | 29.99865 | 02 | 46 | 41.75 | +25 | 42 | 18.0 | 13.37R | C10 | 6.5" Clear | |
| 0029P | C2020 | 07 | 30.06082 | 02 | 46 | 43.10 | +25 | 42 | 30.1 | 13.44R | C10 | | |
| 0029P | C2020 | 07 | 30.12480 | 02 | 46 | 44.55 | +25 | 42 | 42.2 | 13.50R | C10 | | |
| 0029P | C2020 | 07 | 30.04741 | 02 | 46 | 42.81 | +25 | 42 | 27.7 | 13.68R | I81 | 5.25" | |
| 0029P | C2020 | 07 | 30.04814 | 02 | 46 | 42.83 | +25 | 42 | 27.6 | 13.65R | I81 | | |
| 0029P | C2020 | 07 | 30.04887 | 02 | 46 | 42.84 | +25 | 42 | 27.9 | 13.68R | I81 | | |
| 0029P | C2020 | 07 | 30.04959 | 02 | 46 | 42.83 | +25 | 42 | 28.0 | 13.68R | I81 | | |
| 0029P | C2020 | 07 | 30.05032 | 02 | 46 | 42.88 | +25 | 42 | 28.1 | 13.67R | I81 | | |
| 0029P | C2020 | 07 | 30.05106 | 02 | 46 | 42.90 | +25 | 42 | 28.6 | 13.65R | I81 | | |
| 0029P | C2020 | 07 | 30.05179 | 02 | 46 | 42.93 | +25 | 42 | 28.3 | 13.63R | I81 | | |
| 0029P | C2020 | 07 | 30.05252 | 02 | 46 | 42.93 | +25 | 42 | 28.6 | 13.65R | I81 | | |
| 0029P | C2020 | 07 | 30.05326 | 02 | 46 | 42.93 | +25 | 42 | 28.8 | 13.66R | I81 | | |
| 0029P | C2020 | 07 | 30.05399 | 02 | 46 | 42.93 | +25 | 42 | 29.0 | 13.70R | I81 | | |
| 0029P | KC2020 | 07 | 30.08223 | 02 | 46 | 43.59 | +25 | 42 | 34.3 | 13.53R | 204 | 5.6" | |
| 0029P | KC2020 | 07 | 30.08454 | 02 | 46 | 43.65 | +25 | 42 | 35.0 | 13.56R | 204 | | |
| 0029P | C2020 | 07 | 30.07996 | 02 | 46 | 43.52 | +25 | 42 | 34.0 | 13.70R | I81 | 5.25" | |
| 0029P | C2020 | 07 | 30.08069 | 02 | 46 | 43.52 | +25 | 42 | 34.0 | 13.72R | I81 | | |
| 0029P | C2020 | 07 | 30.08141 | 02 | 46 | 43.57 | +25 | 42 | 34.5 | 13.68R | I81 | | |
| 0029P | C2020 | 07 | 30.08213 | 02 | 46 | 43.57 | +25 | 42 | 34.5 | 13.67R | I81 | | |
| 0029P | C2020 | 07 | 30.08285 | 02 | 46 | 43.64 | +25 | 42 | 33.8 | 13.64R | I81 | | |
| 0029P | C2020 | 07 | 30.08357 | 02 | 46 | 43.61 | +25 | 42 | 34.7 | 13.68R | I81 | | |
| 0029P | C2020 | 07 | 30.08429 | 02 | 46 | 43.59 | +25 | 42 | 34.3 | 13.67R | I81 | | |
| 0029P | KC2020 | 07 | 31.02072 | 02 | 47 | 04.50 | +25 | 45 | 31.4 | 14.13R | B96 | 5.0" | |
| 0029P | C2020 | 07 | 30.12911 | 02 | 46 | 44.60 | +25 | 42 | 45.4 | 13.88R | K91 | | |
| 0029P | C2020 | 07 | 30.12977 | 02 | 46 | 44.63 | +25 | 42 | 46.0 | 13.91R | K91 | | |
| 0029P | C2020 | 07 | 30.13042 | 02 | 46 | 44.60 | +25 | 42 | 45.9 | 13.93R | K91 | | |
| 0029P | C2020 | 07 | 30.13106 | 02 | 46 | 44.62 | +25 | 42 | 46.1 | 13.93R | K91 | | |
| 0029P | C2020 | 07 | 30.95114 | 02 | 47 | 02.96 | +25 | 45 | 18.8 | 13.91R | C10 | 6.5" Red J/C | |
| 0029P | C2020 | 07 | 30.99909 | 02 | 47 | 04.03 | +25 | 45 | 27.8 | 13.88R | C10 | 6.5" Clear | |
| 0029P | C2020 | 07 | 31.07149 | 02 | 47 | 05.60 | +25 | 45 | 41.7 | 13.88R | C10 | | |
| 0029P | C2020 | 07 | 31.12029 | 02 | 47 | 06.62 | +25 | 45 | 50.7 | 13.89R | C10 | | |
| 0029P | C2020 | 07 | 31.12878 | 02 | 47 | 06.77 | +25 | 45 | 54.6 | 14.42R | K93 | | |
| 0029P | C2020 | 07 | 31.12944 | 02 | 47 | 06.80 | +25 | 45 | 54.3 | 14.37R | K93 | | |
| 0029P | C2020 | 07 | 31.13010 | 02 | 47 | 06.83 | +25 | 45 | 54.6 | 14.36R | K93 | | |
| 0029P | C2020 | 07 | 31.13076 | 02 | 47 | 06.75 | +25 | 45 | 55.6 | 14.55R | K93 | | |
| 0029P | dC2020 | 07 | 31.40978 | 02 | 47 | 12.98 | +25 | 46 | 43.9 | 14.41R | XXX | 4.84" C. S. | |
| Morris | 0029P | dC2020 | 07 | 31.41265 | 02 | 47 | 13.07 | +25 | 46 | 44.1 | 14.43R | C. S. Morris | 4.84" |
| 0029P | dC2020 | 07 | 31.41610 | 02 | 47 | 13.07 | +25 | 46 | 45.2 | 14.42R | C. S. Morris | 4.84" | |
| 0029P | dC2020 | 07 | 31.41988 | 02 | 47 | 13.23 | +25 | 46 | 46.4 | 14.38R | C. S. Morris | 4.84" | |
| 0029P | dC2020 | 07 | 31.42698 | 02 | 47 | 13.34 | +25 | 46 | 48.3 | 14.45R | C. S. Morris | 4.84" | |
| 0029P | dC2020 | 07 | 31.43118 | 02 | 47 | 13.43 | +25 | 46 | 49.4 | 14.46R | C. S. Morris | 4.84" | |
| 0029P | KC2020 | 08 | 01.06495 | 02 | 47 | 27.00 | +25 | 48 | 48.0 | 14.48R | 204 | 5.6" | |
| 0029P | KC2020 | 08 | 01.06725 | 02 | 47 | 27.08 | +25 | 48 | 48.8 | 14.44R | 204 | | |
| 0029P | C2020 | 08 | 01.12625 | 02 | 47 | 28.30 | +25 | 49 | 01.1 | 14.70R | K93 | 5.5" | |
| 0029P | C2020 | 08 | 01.12794 | 02 | 47 | 28.27 | +25 | 49 | 02.2 | 14.87R | K93 | | |
| 0029P | C2020 | 08 | 01.12963 | 02 | 47 | 28.34 | +25 | 49 | 02.0 | 14.78R | K93 | | |
| 0029P | dC2020 | 08 | 01.46104 | 02 | 47 | 35.43 | +25 | 50 | 01.7 | 14.88R | XXX | 4.84" C. S. | |
| Morris | 0029P | dC2020 | 08 | 01.47042 | 02 | 47 | 35.61 | +25 | 50 | 03.8 | 14.90R | C. S. Morris | 4.84" |
| 0029P | C2020 | 08 | 01.81772 | 02 | 47 | 42.89 | +25 | 51 | 08.9 | 14.98R | E10 | | |
| 0029P | C2020 | 08 | 01.81896 | 02 | 47 | 42.80 | +25 | 51 | 10.0 | 15.00R | E10 | | |
| 0029P | C2020 | 08 | 01.82019 | 02 | 47 | 42.84 | +25 | 51 | 10.3 | 14.97R | E10 | | |
| 0029P | C2020 | 08 | 02.13163 | 02 | 47 | 49.42 | +25 | 52 | 07.2 | 14.99R | K93 | 5.5" | |
| 0029P | C2020 | 08 | 02.13332 | 02 | 47 | 49.42 | +25 | 52 | 07.8 | 15.05R | K93 | | |
| 0029P | C2020 | 08 | 02.13502 | 02 | 47 | 49.44 | +25 | 52 | 08.1 | 15.05R | K93 | | |
| 0029P | dC2020 | 08 | 02.46369 | 02 | 47 | 56.23 | +25 | 53 | 07.4 | 15.13R | XXX | 4.84" C. S. | |
| Morris | 0029P | C2020 | 08 | 02.78564 | 02 | 48 | 02.78 | +25 | 54 | 07.6 | 15.18R | Q64 | 5.5" |
| 0029P | C2020 | 08 | 02.78734 | 02 | 48 | 02.79 | +25 | 54 | 08.0 | 15.13R | Q64 | | |
| 0029P | C2020 | 08 | 02.78904 | 02 | 48 | 02.82 | +25 | 54 | 08.3 | 15.15R | Q64 | | |

| | | | | | | | | | | | |
|--------|--------|----|----------|----|----|-------|-----|----|------|--------|--------------------|
| 0029P | KC2020 | 08 | 02.93183 | 02 | 48 | 05.94 | +25 | 54 | 30.8 | 14.72R | C10 6.5" Rc filter |
| 0029P | KC2020 | 08 | 02.94129 | 02 | 48 | 06.13 | +25 | 54 | 32.6 | 14.88R | C10 |
| 0029P | KC2020 | 08 | 02.95182 | 02 | 48 | 06.35 | +25 | 54 | 35.8 | 14.85R | C10 |
| 0029P | KC2020 | 08 | 03.94034 | 02 | 48 | 26.02 | +25 | 57 | 34.8 | 15.04R | C10 6.5" Rc filter |
| 0029P | KC2020 | 08 | 04.00496 | 02 | 48 | 27.25 | +25 | 57 | 46.7 | 15.09R | C10 6.5" No Filter |
| 0029P | KC2020 | 08 | 04.04870 | 02 | 48 | 28.12 | +25 | 57 | 55.0 | 15.05R | C10 |
| 0029P | KC2020 | 08 | 04.12421 | 02 | 48 | 29.55 | +25 | 58 | 08.4 | 15.13R | C10 |
| 0029P | C2020 | 08 | 04.01426 | 02 | 48 | 27.31 | +25 | 57 | 48.4 | 15.31R | I81 |
| 0029P | C2020 | 08 | 04.01499 | 02 | 48 | 27.39 | +25 | 57 | 48.8 | 15.26R | I81 |
| 0029P | C2020 | 08 | 04.01572 | 02 | 48 | 27.38 | +25 | 57 | 48.7 | 15.31R | I81 |
| 0029P | C2020 | 08 | 04.01646 | 02 | 48 | 27.44 | +25 | 57 | 48.6 | 15.35R | I81 |
| 0029P | C2020 | 08 | 04.01719 | 02 | 48 | 27.39 | +25 | 57 | 48.9 | 15.29R | I81 |
| 0029P | C2020 | 08 | 04.01792 | 02 | 48 | 27.44 | +25 | 57 | 49.1 | 15.38R | I81 |
| 0029P | C2020 | 08 | 04.01865 | 02 | 48 | 27.49 | +25 | 57 | 49.0 | 15.19R | I81 |
| 0029P | C2020 | 08 | 04.01939 | 02 | 48 | 27.47 | +25 | 57 | 49.6 | 15.31R | I81 |
| 0029P | C2020 | 08 | 04.02012 | 02 | 48 | 27.40 | +25 | 57 | 50.2 | 15.34R | I81 |
| 0029P | C2020 | 08 | 04.02085 | 02 | 48 | 27.51 | +25 | 57 | 49.5 | 15.19R | I81 |
| 0029P | KC2020 | 08 | 04.94218 | 02 | 48 | 45.42 | +26 | 00 | 35.2 | 15.28R | C10 6.5" Rc filter |
| 0029P | KC2020 | 08 | 04.99187 | 02 | 48 | 46.32 | +26 | 00 | 43.6 | 15.16R | C10 6.5" No Filter |
| 0029P | KC2020 | 08 | 05.05927 | 02 | 48 | 47.60 | +26 | 00 | 55.7 | 15.15R | C10 |
| 0029P | KC2020 | 08 | 05.12785 | 02 | 48 | 48.84 | +26 | 01 | 08.3 | 15.21R | C10 |
| 0029P | KC2020 | 08 | 05.06011 | 02 | 48 | 47.56 | +26 | 00 | 56.7 | 15.45R | 204 |
| 0029P | KC2020 | 08 | 05.06356 | 02 | 48 | 47.59 | +26 | 00 | 57.5 | 15.42R | 204 |
| 0029P | KC2020 | 08 | 05.12354 | 02 | 48 | 48.74 | +26 | 01 | 08.0 | 15.34R | Z10 6.1" 10x30s |
| 0029P | KC2020 | 08 | 05.12779 | 02 | 48 | 48.81 | +26 | 01 | 09.0 | 15.40R | Z10 |
| 0029P | KC2020 | 08 | 05.93181 | 02 | 49 | 03.91 | +26 | 03 | 30.4 | 15.38R | C10 6.5" Rc filter |
| 0029P | KC2020 | 08 | 05.97600 | 02 | 49 | 04.75 | +26 | 03 | 38.5 | 15.45R | C10 6.5" No Filter |
| 0029P | KC2020 | 08 | 06.06252 | 02 | 49 | 06.30 | +26 | 03 | 54.0 | 15.36R | C10 |
| 0029P | KC2020 | 08 | 06.13020 | 02 | 49 | 07.52 | +26 | 04 | 05.6 | 15.42R | C10 |
| 0029P | C2020 | 08 | 06.02100 | 02 | 49 | 05.41 | +26 | 03 | 46.9 | 15.79R | I81 |
| 0029P | C2020 | 08 | 06.02172 | 02 | 49 | 05.42 | +26 | 03 | 46.4 | 15.77R | I81 |
| 0029P | C2020 | 08 | 06.02245 | 02 | 49 | 05.49 | +26 | 03 | 46.1 | 15.78R | I81 |
| 0029P | C2020 | 08 | 06.02319 | 02 | 49 | 05.45 | +26 | 03 | 47.9 | 15.78R | I81 |
| 0029P | C2020 | 08 | 06.02392 | 02 | 49 | 05.49 | +26 | 03 | 47.2 | 15.84R | I81 |
| 0029P | C2020 | 08 | 06.02465 | 02 | 49 | 05.55 | +26 | 03 | 46.4 | 15.64R | I81 |
| 0029P | C2020 | 08 | 06.02685 | 02 | 49 | 05.53 | +26 | 03 | 48.1 | 15.73R | I81 |
| 0029P | C2020 | 08 | 06.21787 | 02 | 49 | 09.18 | +26 | 04 | 21.9 | 15.80R | Z17 5.7" 0.4-m 60s |
| 0029P | C2020 | 08 | 06.21873 | 02 | 49 | 09.12 | +26 | 04 | 22.6 | 15.74R | Z17 |
| 0029P | C2020 | 08 | 06.21960 | 02 | 49 | 09.05 | +26 | 04 | 22.4 | 15.81R | Z17 |
| 0029P | C2020 | 08 | 06.22046 | 02 | 49 | 09.11 | +26 | 04 | 22.4 | 15.89R | Z17 |
| 0029P | KC2020 | 08 | 06.95114 | 02 | 49 | 22.39 | +26 | 06 | 29.2 | 15.61R | C10 6.5" No Filter |
| 0029P | KC2020 | 08 | 07.02462 | 02 | 49 | 23.66 | +26 | 06 | 42.5 | 15.59R | C10 |
| 0029P | KC2020 | 08 | 07.06972 | 02 | 49 | 24.51 | +26 | 06 | 50.2 | 15.56R | C10 |
| 0029P | C2020 | 08 | 07.00420 | 02 | 49 | 23.22 | +26 | 06 | 39.1 | 15.91R | I81 5.25" rather |
| 0029P | C2020 | 08 | 07.00492 | 02 | 49 | 23.23 | +26 | 06 | 37.7 | 15.85R | I81 |
| 0029P | C2020 | 08 | 07.00564 | 02 | 49 | 23.24 | +26 | 06 | 38.8 | 15.96R | I81 |
| 0029P | C2020 | 08 | 07.00636 | 02 | 49 | 23.26 | +26 | 06 | 39.1 | 15.89R | I81 |
| 0029P | C2020 | 08 | 07.00708 | 02 | 49 | 23.35 | +26 | 06 | 38.9 | 15.79R | I81 |
| 0029P | KC2020 | 08 | 07.05202 | 02 | 49 | 24.12 | +26 | 06 | 47.3 | 15.74R | 204 |
| 0029P | KC2020 | 08 | 07.21915 | 02 | 49 | 26.98 | +26 | 07 | 16.9 | 16.10R | Z17 4.7" 4x60s |
| SNR=15 | | | | | | | | | | | |
| 0029P | C2020 | 08 | 08.02604 | 02 | 49 | 41.10 | +26 | 09 | 35.3 | 16.06R | I81 5.25" |
| 0029P | C2020 | 08 | 08.02677 | 02 | 49 | 41.08 | +26 | 09 | 35.4 | 16.13R | I81 |
| 0029P | C2020 | 08 | 08.02750 | 02 | 49 | 41.12 | +26 | 09 | 35.9 | 16.10R | I81 |
| 0029P | C2020 | 08 | 08.02823 | 02 | 49 | 41.12 | +26 | 09 | 35.2 | 16.02R | I81 |
| 0029P | C2020 | 08 | 08.02897 | 02 | 49 | 41.16 | +26 | 09 | 35.8 | 16.06R | I81 |
| 0029P | C2020 | 08 | 08.02970 | 02 | 49 | 41.10 | +26 | 09 | 36.2 | 15.96R | I81 |
| 0029P | C2020 | 08 | 08.03043 | 02 | 49 | 41.18 | +26 | 09 | 36.2 | 16.04R | I81 |
| 0029P | C2020 | 08 | 08.03116 | 02 | 49 | 41.14 | +26 | 09 | 36.0 | 16.00R | I81 |
| 0029P | C2020 | 08 | 08.03190 | 02 | 49 | 41.17 | +26 | 09 | 36.4 | 16.05R | I81 |
| 0029P | C2020 | 08 | 08.03263 | 02 | 49 | 41.19 | +26 | 09 | 36.3 | 16.18R | I81 |

| | | | | | | | | |
|----------------------|--------------------|-------------|-------------|--|--|--|--------|----------------------|
| 0029P | 2020 08 09.02869 | | | | | | 16.08R | Z80 5.6" No filter |
| +/- 0.12 mag 115x10s | | | | | | | | |
| 0029P | C2020 08 09.04484 | 02 49 58.32 | +26 12 29.6 | | | | 16.08R | I81 5.25" |
| 0029P | C2020 08 09.04625 | 02 49 58.26 | +26 12 29.5 | | | | 16.10R | I81 |
| 0029P | C2020 08 09.04767 | 02 49 58.29 | +26 12 29.7 | | | | 16.15R | I81 |
| 0029P | C2020 08 09.04911 | 02 49 58.33 | +26 12 30.0 | | | | 16.10R | I81 |
| 0029P | C2020 08 09.05054 | 02 49 58.33 | +26 12 30.2 | | | | 16.18R | I81 |
| 0029P | C2020 08 09.05198 | 02 49 58.37 | +26 12 30.1 | | | | 16.04R | I81 |
| 0029P | C2020 08 09.05342 | 02 49 58.35 | +26 12 30.7 | | | | 16.19R | I81 |
| 0029P | C2020 08 09.05485 | 02 49 58.42 | +26 12 31.2 | | | | 16.16R | I81 |
| 0029P | C2020 08 09.05629 | 02 49 58.42 | +26 12 30.9 | | | | 16.16R | I81 |
| 0029P | C2020 08 09.05773 | 02 49 58.43 | +26 12 31.3 | | | | 16.11R | I81 |
| 0029P | KC2020 08 09.04072 | 02 49 58.18 | +26 12 29.0 | | | | 16.32R | J77 5.44" 14x60s r |
| filter | | | | | | | | |
| 0029P | KC2020 08 09.05074 | 02 49 58.34 | +26 12 31.0 | | | | 16.35R | J77 |
| 0029P | KC2020 08 09.06076 | 02 49 58.53 | +26 12 32.3 | | | | 16.27R | J77 |
| 0029P | KC2020 08 09.21924 | 02 50 01.17 | +26 12 59.6 | | | | 16.31R | Z17 5.7" 4x60s |
| SNR=12 | | | | | | | | |
| 0029P | dC2020 08 09.43819 | 02 50 04.67 | +26 13 36.7 | | | | 16.50R | XXX 4.8" 0.41-m |
| (CSMorriss) | | | | | | | | |
| 0029P | dC2020 08 09.45101 | 02 50 04.91 | +26 13 39.0 | | | | 16.34R | XXX 4.8" 0.41-m |
| (CSMorriss) | | | | | | | | |
| 0029P | C2020 08 10.21917 | 02 50 17.16 | +26 15 47.8 | | | | 16.35R | Z17 5.7" 4x60s |
| 0029P | 2020 08 11.00195 | | | | | | 16.18R | Z80 5.6" No filter |
| +/- 0.09 mag 137x10s | | | | | | | | |
| 0029P | C2020 08 11.21917 | 02 50 32.74 | +26 18 33.4 | | | | 16.46R | Z17 5.7" 4x60s |
| 0029P | 2020 08 12.00924 | | | | | | 16.37R | Z80 5.6" No filter |
| +/- 0.09 mag 124x10s | | | | | | | | |
| 0029P | C2020 08 12.21916 | 02 50 47.59 | +26 21 17.4 | | | | 16.56R | Z17 5.7" 4x60s |
| 0029P | dC2020 08 12.44684 | 02 50 50.80 | +26 21 54.2 | | | | 16.61R | XXX 4.8" 0.41-m |
| (CSMorriss) | | | | | | | | |
| 0029P | dC2020 08 12.44935 | 02 50 50.85 | +26 21 54.6 | | | | 16.71R | XXX 4.8" (CSMorriss) |
| 0029P | dC2020 08 12.45229 | 02 50 50.87 | +26 21 55.2 | | | | 16.65R | XXX 4.8" (CSMorriss) |
| 0029P | dC2020 08 12.45501 | 02 50 50.93 | +26 21 55.5 | | | | 16.68R | XXX 4.8" (CSMorriss) |
| 0029P | dC2020 08 12.45856 | 02 50 50.96 | +26 21 56.6 | | | | 16.60R | XXX 4.8" (CSMorriss) |
| 0029P | C2020 08 13.21916 | 02 51 01.66 | +26 23 58.7 | | | | 16.65R | Z17 5.7" 4x60s |
| 0029P | C2020 08 14.09616 | 02 51 13.63 | +26 26 19.5 | | | | 16.90R | L09 5.7" 3x120s |
| 0029P | C2020 08 14.47219 | 02 51 18.61 | +26 27 17.3 | | | | 16.73R | L09 5.7" 2x120s |
| 0029P | KC2020 08 15.05874 | 02 51 26.10 | +26 28 48.6 | | | | 16.55R | 204 |
| 0029P | KC2020 08 15.10146 | 02 51 26.62 | +26 28 55.3 | | | | 16.56R | 204 |
| 0029P | dC2020 08 15.43080 | 02 51 30.79 | +26 29 46.8 | | | | 16.85R | XXX 4.8" 0.41-m |
| (CSMorriss) | | | | | | | | |
| 0029P | C2020 08 15.46966 | 02 51 31.28 | +26 29 52.9 | | | | 16.80R | T04 5.7" |
| 0029P | C2020 08 15.47122 | 02 51 31.32 | +26 29 53.0 | | | | 16.89R | T04 |
| 0029P | C2020 08 15.47277 | 02 51 31.29 | +26 29 53.3 | | | | 16.80R | T04 |
| 0029P | C2020 08 16.46966 | 02 51 43.26 | +26 32 26.2 | | | | 16.83R | T04 5.7" |
| 0029P | C2020 08 16.47121 | 02 51 43.32 | +26 32 26.5 | | | | 16.77R | T04 |
| 0029P | C2020 08 16.47276 | 02 51 43.34 | +26 32 26.7 | | | | 16.89R | T04 |
| 0029P | 2020 08 16.99549 | | | | | | 16.74R | Z80 5.6" No filter |
| +/- 0.08 mag 120x10s | | | | | | | | |
| 0029P | C2020 08 17.46964 | 02 51 54.66 | +26 34 57.0 | | | | 16.88R | T04 |
| 0029P | C2020 08 17.47118 | 02 51 54.68 | +26 34 57.2 | | | | 16.80R | T04 |
| 0029P | C2020 08 17.47273 | 02 51 54.69 | +26 34 57.5 | | | | 16.93R | T04 |
| 0029P | KC2020 08 18.09870 | 02 52 01.46 | +26 36 30.4 | | | | 16.88R | Z10 5.5" |
| 0029P | KC2020 08 18.10565 | 02 52 01.53 | +26 36 31.5 | | | | 16.93R | Z10 |
| 0029P | C2020 08 18.46234 | 02 52 05.32 | +26 37 24.6 | | | | 17.03R | T03 |

| | | | | | | | | | | | |
|---|--------|----|----------|----|----|-------|-----|----|------|--------|---------------------|
| 0029P | KC2020 | 08 | 19.02888 | 02 | 52 | 11.02 | +26 | 38 | 46.1 | 16.87R | B96 5.0" nearby |
| star removed | | | | | | | | | | | |
| 0029P | C2020 | 08 | 19.48814 | 02 | 52 | 15.53 | +26 | 39 | 54.0 | 17.07R | T03 |
| 0029P | C2020 | 08 | 19.48972 | 02 | 52 | 15.55 | +26 | 39 | 54.3 | 17.13R | T03 |
| 0029P | C2020 | 08 | 19.49127 | 02 | 52 | 15.57 | +26 | 39 | 54.5 | 17.15R | T03 |
| 0029P | C2020 | 08 | 20.43093 | | | | | | | 16.96R | H06 5.76" (NDJ) |
| 0029P | C2020 | 08 | 20.43569 | | | | | | | 16.93R | H06 5.76" (NDJ) |
| 0029P | KC2020 | 08 | 20.94534 | 02 | 52 | 28.90 | +26 | 43 | 20.9 | 16.66N | L27 6.6" |
| 0029P | KC2020 | 08 | 20.98898 | 02 | 52 | 29.25 | +26 | 43 | 26.9 | 16.57N | L27 |
| 0029P | KC2020 | 08 | 21.03555 | 02 | 52 | 29.64 | +26 | 43 | 33.6 | 16.51N | L27 |
| 0029P | KC2020 | 08 | 21.08213 | 02 | 52 | 30.02 | +26 | 43 | 40.3 | 16.66N | L27 |
| 0029P | KC2020 | 08 | 21.13585 | 02 | 52 | 30.51 | +26 | 43 | 47.9 | 16.68N | L27 |
| 0029P | KC2020 | 08 | 21.06837 | 02 | 52 | 29.88 | +26 | 43 | 38.5 | 16.86R | 204 |
| 0029P | KC2020 | 08 | 21.10705 | 02 | 52 | 30.20 | +26 | 43 | 44.0 | 16.90R | 204 |
| 0029P | C2020 | 08 | 21.50611 | 02 | 52 | 33.57 | +26 | 44 | 39.8 | 16.93R | T04 |
| 0029P | C2020 | 08 | 21.58154 | 02 | 52 | 34.16 | +26 | 44 | 50.6 | 17.03R | T04 |
| 0029P | C2020 | 08 | 21.58308 | 02 | 52 | 34.17 | +26 | 44 | 50.8 | 17.04R | T04 |
| 0029P | C2020 | 08 | 21.58466 | 02 | 52 | 34.18 | +26 | 44 | 51.0 | 16.94R | T04 |
| 0029P | KC2020 | 08 | 21.94992 | 02 | 52 | 37.25 | +26 | 45 | 40.7 | 16.78N | L27 6.6" |
| 0029P | KC2020 | 08 | 21.99638 | 02 | 52 | 37.58 | +26 | 45 | 47.2 | 16.79N | L27 |
| 0029P | KC2020 | 08 | 22.04287 | 02 | 52 | 37.94 | +26 | 45 | 53.7 | 16.67N | L27 |
| 0029P | KC2020 | 08 | 21.98299 | 02 | 52 | 37.44 | +26 | 45 | 45.3 | 17.02R | 204 5.6" 5x60s last |
| frame cosmic ray | | | | | | | | | | | |
| 0029P | C2020 | 08 | 21.98200 | 02 | 52 | 37.44 | +26 | 45 | 45.3 | 17.05R | 204 5.6" 60s RM |
| measured | | | | | | | | | | | |
| 0029P | C2020 | 08 | 21.98241 | 02 | 52 | 37.44 | +26 | 45 | 45.0 | 17.10R | 204 |
| 0029P | C2020 | 08 | 21.98281 | 02 | 52 | 37.44 | +26 | 45 | 45.3 | 17.08R | 204 |
| 0029P | C2020 | 08 | 21.98322 | 02 | 52 | 37.44 | +26 | 45 | 45.3 | 17.01R | 204 |
| 0029P | C2020 | 08 | 22.01495 | 02 | 52 | 37.70 | +26 | 45 | 49.8 | 16.90R | I81 5.25" variable |
| transparency | | | | | | | | | | | |
| 0029P | C2020 | 08 | 22.01567 | 02 | 52 | 37.68 | +26 | 45 | 49.1 | 16.90R | I81 |
| 0029P | C2020 | 08 | 22.01639 | 02 | 52 | 37.66 | +26 | 45 | 49.4 | 17.32R | I81 |
| 0029P | C2020 | 08 | 22.01711 | 02 | 52 | 37.70 | +26 | 45 | 49.6 | 16.86R | I81 |
| 0029P | C2020 | 08 | 22.01783 | 02 | 52 | 37.68 | +26 | 45 | 49.9 | 17.02R | I81 |
| 0029P | C2020 | 08 | 22.01855 | 02 | 52 | 37.71 | +26 | 45 | 49.9 | 16.72R | I81 |
| 0029P | C2020 | 08 | 22.01927 | 02 | 52 | 37.71 | +26 | 45 | 50.0 | 16.79R | I81 |
| 0029P | C2020 | 08 | 22.01999 | 02 | 52 | 37.73 | +26 | 45 | 49.9 | 16.97R | I81 |
| 0029P | C2020 | 08 | 22.02071 | 02 | 52 | 37.75 | +26 | 45 | 49.8 | 16.81R | I81 |
| 0029P | C2020 | 08 | 22.01777 | 02 | 52 | 37.69 | +26 | 45 | 49.6 | 16.99R | I81 5.25" 6x60s RM |
| measured | | | | | | | | | | | |
| 0029P | C2020 | 08 | 22.02208 | 02 | 52 | 37.73 | +26 | 45 | 49.8 | 16.94R | I81 not |
| flatfielded corr +0.05 | | | | | | | | | | | |
| 0029P | C2020 | 08 | 22.02640 | 02 | 52 | 37.76 | +26 | 45 | 50.5 | 16.99R | I81 |
| 0029P | C2020 | 08 | 22.03292 | | | | | | | 16.95R | 970 5.7" |
| 0029P | C2020 | 08 | 22.04444 | | | | | | | 16.93R | 970 5.7" |
| 0029P | C2020 | 08 | 22.01469 | 02 | 52 | 37.65 | +26 | 45 | 49.5 | 17.00R | 970 5.2" 8x60s RM |
| measured | | | | | | | | | | | |
| 0029P | C2020 | 08 | 22.02160 | 02 | 52 | 37.71 | +26 | 45 | 50.6 | 17.00R | 970 |
| 0029P | C2020 | 08 | 22.02815 | 02 | 52 | 37.76 | +26 | 45 | 51.5 | 17.06R | 970 |
| 0029P | C2020 | 08 | 22.03608 | 02 | 52 | 37.83 | +26 | 45 | 52.4 | 16.95R | 970 |
| 0029P | C2020 | 08 | 22.04185 | 02 | 52 | 37.86 | +26 | 45 | 53.4 | 17.02R | 970 |
| 0029P | C2020 | 08 | 22.05372 | 02 | 52 | 37.92 | +26 | 45 | 54.5 | 17.07R | 970 |
| 0029P | C2020 | 08 | 22.07499 | 02 | 52 | 38.12 | +26 | 45 | 58.1 | 16.98R | 970 |
| 0029P | KC2020 | 08 | 22.09068 | 02 | 52 | 38.27 | +26 | 46 | 00.2 | 16.71N | L27 6.6" |
| 0029P | KC2020 | 08 | 22.13762 | 02 | 52 | 38.64 | +26 | 46 | 06.8 | 16.30N | L27 outburst |
| 0029P | KC2020 | 08 | 22.15497 | 02 | 52 | 38.72 | +26 | 46 | 09.2 | 16.45N | L27 cloud |
| affected | | | | | | | | | | | |
| **mini-outburst at 2020 08 22.093 +/-0.004 17.00R => 16.50R | | | | | | | | | | | |
| 0029P | C2020 | 08 | 22.10426 | 02 | 52 | 38.35 | +26 | 46 | 02.2 | 16.88R | K01 5.1" R filter |
| 3x60s | | | | | | | | | | | |
| 0029P | C2020 | 08 | 22.10697 | 02 | 52 | 38.37 | +26 | 46 | 02.7 | 16.89R | K01 3x60s |
| 0029P | C2020 | 08 | 22.10939 | 02 | 52 | 38.38 | +26 | 46 | 03.0 | 16.91R | K01 3x60s |

| | | | | | | | | | | | | |
|------------------|--------|----|----------|----|----|-------|-----|----|------|--------|-----|-----------------|
| 0029P | C2020 | 08 | 24.01540 | 02 | 52 | 52.07 | +26 | 50 | 19.2 | 16.35R | I81 | 5.25" |
| 0029P | C2020 | 08 | 24.01682 | 02 | 52 | 52.08 | +26 | 50 | 19.4 | 16.45R | I81 | |
| 0029P | C2020 | 08 | 24.01825 | 02 | 52 | 52.09 | +26 | 50 | 19.5 | 16.42R | I81 | |
| 0029P | C2020 | 08 | 24.01967 | 02 | 52 | 52.10 | +26 | 50 | 19.7 | 16.35R | I81 | |
| 0029P | C2020 | 08 | 24.02109 | 02 | 52 | 52.12 | +26 | 50 | 19.8 | 16.53R | I81 | |
| 0029P | C2020 | 08 | 24.02252 | 02 | 52 | 52.13 | +26 | 50 | 20.3 | 16.43R | I81 | |
| 0029P | C2020 | 08 | 24.02394 | 02 | 52 | 52.13 | +26 | 50 | 20.3 | 16.34R | I81 | |
| 0029P | C2020 | 08 | 24.02535 | 02 | 52 | 52.13 | +26 | 50 | 20.8 | 16.38R | I81 | |
| 0029P | C2020 | 08 | 24.02676 | 02 | 52 | 52.14 | +26 | 50 | 20.7 | 16.40R | I81 | |
| 0029P | C2020 | 08 | 24.02816 | 02 | 52 | 52.17 | +26 | 50 | 21.0 | 16.44R | I81 | |
| 0029P | C2020 | 08 | 24.02874 | 02 | 52 | 52.11 | +26 | 50 | 20.1 | 16.46R | I81 | 5.25" 10x120s |
| cropped image | | | | | | | | | | | | |
| 0029P | C2020 | 08 | 24.03385 | 02 | 52 | 52.07 | +26 | 50 | 19.2 | 16.43R | 970 | |
| 0029P | C2020 | 08 | 24.04251 | 02 | 52 | 52.08 | +26 | 50 | 19.4 | 16.47R | 970 | |
| 0029P | C2020 | 08 | 24.08848 | 02 | 52 | 52.09 | +26 | 50 | 19.5 | 16.42R | 970 | |
| 0029P | C2020 | 08 | 24.11145 | 02 | 52 | 52.10 | +26 | 50 | 19.7 | 16.49R | 970 | |
| 0029P | C2020 | 08 | 24.30458 | 02 | 52 | 53.98 | +26 | 50 | 57.5 | 16.76R | V38 | 5.7" 3x120s |
| poor SNR | | | | | | | | | | | | |
| 0029P | C2020 | 08 | 24.30909 | 02 | 52 | 53.99 | +26 | 50 | 58.2 | 16.75R | V38 | |
| 0029P | C2020 | 08 | 24.62578 | 02 | 52 | 55.84 | +26 | 51 | 40.7 | 16.52R | F65 | 5.4" 2.0-m 120s |
| 0029P | C2020 | 08 | 24.62736 | 02 | 52 | 55.85 | +26 | 51 | 40.8 | 16.52R | F65 | |
| 0029P | C2020 | 08 | 24.62893 | 02 | 52 | 55.86 | +26 | 51 | 41.0 | 16.53R | F65 | |
| 0029P | C2020 | 08 | 24.63051 | 02 | 52 | 55.90 | +26 | 51 | 41.1 | 16.49R | F65 | |
| 0029P | C2020 | 08 | 24.63209 | 02 | 52 | 55.89 | +26 | 51 | 41.1 | 16.51R | F65 | |
| 0029P | C2020 | 08 | 24.63367 | 02 | 52 | 55.90 | +26 | 51 | 41.5 | 16.52R | F65 | |
| 0029P | C2020 | 08 | 25.01043 | 02 | 52 | 58.18 | +26 | 52 | 28.8 | 16.38R | I81 | 5.25" |
| 0029P | C2020 | 08 | 25.01184 | 02 | 52 | 58.19 | +26 | 52 | 29.8 | 16.40R | I81 | |
| 0029P | C2020 | 08 | 25.01327 | 02 | 52 | 58.23 | +26 | 52 | 29.4 | 16.38R | I81 | |
| 0029P | C2020 | 08 | 25.01469 | 02 | 52 | 58.21 | +26 | 52 | 29.5 | 16.43R | I81 | |
| 0029P | C2020 | 08 | 25.01612 | 02 | 52 | 58.24 | +26 | 52 | 30.1 | 16.40R | I81 | |
| 0029P | C2020 | 08 | 25.01754 | 02 | 52 | 58.22 | +26 | 52 | 30.1 | 16.41R | I81 | |
| 0029P | C2020 | 08 | 25.01897 | 02 | 52 | 58.23 | +26 | 52 | 30.3 | 16.39R | I81 | |
| 0029P | C2020 | 08 | 25.02039 | 02 | 52 | 58.25 | +26 | 52 | 30.5 | 16.41R | I81 | |
| 0029P | C2020 | 08 | 25.02182 | 02 | 52 | 58.25 | +26 | 52 | 30.5 | 16.38R | I81 | |
| 0029P | C2020 | 08 | 25.02324 | 02 | 52 | 58.26 | +26 | 52 | 30.8 | 16.39R | I81 | |
| 0029P | KC2020 | 08 | 25.43289 | 02 | 53 | 00.58 | +26 | 53 | 24.2 | 16.43R | 718 | 6.6" 10x30s |
| Clear | | | | | | | | | | | | |
| 0029P | KC2020 | 08 | 25.45076 | 02 | 53 | 00.66 | +26 | 53 | 26.4 | 16.40R | 718 | |
| 0029P | C2020 | 08 | 25.44543 | | | | | | | 16.59R | H06 | 5.76" or 6.2" |
| (NDJ) | | | | | | | | | | | | |
| 0029P | C2020 | 08 | 25.45020 | | | | | | | 16.68R | H06 | 5.76" or 6.2" |
| (NDJ) | | | | | | | | | | | | |
| 0029P | C2020 | 08 | 25.53456 | 02 | 53 | 01.22 | +26 | 53 | 37.9 | 16.46R | F65 | 5.4" nearby |
| star subtracted | | | | | | | | | | | | |
| 0029P | C2020 | 08 | 25.53614 | 02 | 53 | 01.13 | +26 | 53 | 38.0 | 16.46R | F65 | light from |
| star in aperture | | | | | | | | | | | | |
| 0029P | KC2020 | 08 | 25.95423 | 02 | 53 | 03.36 | +26 | 54 | 30.1 | 16.42N | L27 | 6.6" |
| 0029P | KC2020 | 08 | 26.00076 | 02 | 53 | 03.64 | +26 | 54 | 36.1 | 16.37N | L27 | |
| 0029P | KC2020 | 08 | 26.04727 | 02 | 53 | 03.84 | +26 | 54 | 42.2 | 16.39N | L27 | |
| 0029P | KC2020 | 08 | 26.09381 | 02 | 53 | 04.05 | +26 | 54 | 48.2 | 16.43N | L27 | |
| 0029P | KC2020 | 08 | 26.15116 | 02 | 53 | 04.32 | +26 | 54 | 55.4 | 16.38N | L27 | |
| 0029P | KC2020 | 08 | 26.10916 | 02 | 53 | 04.14 | +26 | 54 | 50.2 | 16.64R | Z10 | 5.5" 0.32-m |
| 6x60s | | | | | | | | | | | | |
| 0029P | KC2020 | 08 | 26.11384 | 02 | 53 | 04.16 | +26 | 54 | 50.6 | 16.59R | Z10 | |
| 0029P | KC2020 | 08 | 26.11850 | 02 | 53 | 04.20 | +26 | 54 | 51.1 | 16.64R | Z10 | |
| 0029P | C2020 | 08 | 26.39477 | 02 | 53 | 05.53 | +26 | 55 | 26.3 | 16.64R | H06 | 5.76" R 120s |
| (AW) | | | | | | | | | | | | |
| 0029P | C2020 | 08 | 26.39642 | 02 | 53 | 05.54 | +26 | 55 | 26.7 | 16.65R | H06 | |
| 0029P | C2020 | 08 | 26.39809 | 02 | 53 | 05.54 | +26 | 55 | 26.7 | 16.46R | H06 | |
| 0029P | C2020 | 08 | 26.39976 | 02 | 53 | 05.55 | +26 | 55 | 27.0 | 16.59R | H06 | |
| 0029P | C2020 | 08 | 26.42058 | 02 | 53 | 05.62 | +26 | 55 | 29.1 | 16.55R | 718 | 5.1" 120s Clear |
| 0029P | C2020 | 08 | 26.42211 | 02 | 53 | 05.66 | +26 | 55 | 29.5 | 16.49R | 718 | |
| 0029P | C2020 | 08 | 26.42364 | 02 | 53 | 05.65 | +26 | 55 | 29.4 | 16.55R | 718 | |
| 0029P | C2020 | 08 | 26.42516 | 02 | 53 | 05.67 | +26 | 55 | 29.7 | 16.57R | 718 | |
| 0029P | C2020 | 08 | 26.42669 | 02 | 53 | 05.68 | +26 | 55 | 29.5 | 16.54R | 718 | |

| | | | |
|---------------------------|--|--------|---------------------|
| 0029P (CSMorris) ? | dC2020 08 28.32029 02 53 13.55 +26 59 22.1 | 16.78R | XXX 4.8" 0.41-m |
| 0029P (CSMorris) | dC2020 08 28.32747 02 53 13.56 +26 59 22.8 | 16.57R | XXX 4.8" 0.41-m |
| 0029P (CSMorris) | dC2020 08 28.33017 02 53 13.56 +26 59 23.6 | 16.66R | XXX 4.8" 0.41-m |
| 0029P | C2020 08 28.33682 02 53 13.59 +26 59 24.1 | 16.61R | 718 5.1" 120s Clear |
| 0029P | C2020 08 28.33835 02 53 13.59 +26 59 24.4 | 16.69R | 718 |
| 0029P | C2020 08 28.33988 02 53 13.58 +26 59 24.7 | 16.66R | 718 |
| 0029P | C2020 08 28.34141 02 53 13.60 +26 59 24.6 | 16.62R | 718 |
| 0029P | C2020 08 28.34294 02 53 13.62 +26 59 24.7 | 16.68R | 718 |
| 0029P | C2020 08 28.34447 02 53 13.61 +26 59 25.0 | 16.60R | 718 |
| 0029P | C2020 08 28.34600 02 53 13.59 +26 59 24.8 | 16.69R | 718 |
| 0029P | C2020 08 28.34752 02 53 13.63 +26 59 25.3 | 16.69R | 718 |
| 0029P | C2020 08 28.34905 02 53 13.63 +26 59 25.5 | 16.67R | 718 |
| 0029P | C2020 08 28.35058 02 53 13.64 +26 59 25.7 | 16.66R | 718 |
| 0029P | C2020 08 28.77027 02 53 14.91 +27 00 17.9 | 16.71R | E10 5.4" 2.0-m 120s |
| 0029P | C2020 08 28.77184 02 53 14.90 +27 00 18.0 | 16.72R | E10 |
| 0029P | C2020 08 28.77343 02 53 14.93 +27 00 17.9 | 16.72R | E10 |
| 0029P | C2020 08 28.77504 02 53 14.93 +27 00 18.3 | 16.71R | E10 |
| 0029P | C2020 08 28.77661 02 53 14.93 +27 00 18.1 | 16.69R | E10 |
| 0029P | C2020 08 28.77819 02 53 14.94 +27 00 18.6 | 16.68R | E10 |
| 0029P 120s Clear | C2020 08 29.38429 02 53 16.79 +27 01 28.1 | 16.73R | 718 5.1" 0.35-m |
| 0029P | C2020 08 29.38582 02 53 16.78 +27 01 28.0 | 16.69R | 718 |
| 0029P | C2020 08 29.38735 02 53 16.79 +27 01 28.5 | 16.72R | 718 |
| 0029P | C2020 08 29.38888 02 53 16.79 +27 01 28.7 | 16.70R | 718 |
| 0029P | C2020 08 29.39041 02 53 16.78 +27 01 28.7 | 16.73R | 718 |
| 0029P | C2020 08 29.39346 02 53 16.80 +27 01 29.0 | 16.70R | 718 |
| 0029P | C2020 08 29.39499 02 53 16.80 +27 01 29.2 | 16.77R | 718 |
| 0029P | C2020 08 29.74603 02 53 17.64 +27 02 12.1 | 16.69R | E10 5.4" 2.0-m 120s |
| 0029P | C2020 08 29.74761 02 53 17.64 +27 02 12.3 | 16.70R | E10 |
| 0029P | C2020 08 29.74919 02 53 17.65 +27 02 12.5 | 16.68R | E10 |
| 0029P | C2020 08 29.75077 02 53 17.65 +27 02 12.4 | 16.68R | E10 |
| 0029P | C2020 08 29.75235 02 53 17.65 +27 02 12.8 | 16.71R | E10 |
| 0029P | C2020 08 29.75393 02 53 17.66 +27 02 12.8 | 16.71R | E10 |
| 0029P 6x60s no filter | C2020 08 30.14752 02 53 18.57 +27 02 56.4 | 16.76R | Z10 5.5" 0.32-m |
| 0029P | C2020 08 30.15218 02 53 18.56 +27 02 57.1 | 16.77R | Z10 |
| 0029P | C2020 08 30.15684 02 53 18.59 +27 02 57.7 | 16.76R | Z10 |
| 0029P 120s Clear | C2020 08 30.35267 02 53 19.04 +27 03 19.3 | 16.82R | 718 5.1" 0.35-m |
| 0029P | C2020 08 30.35420 02 53 19.07 +27 03 19.9 | 16.76R | 718 |
| 0029P | C2020 08 30.35573 02 53 19.03 +27 03 20.0 | 16.58R | 718 |
| 0029P | C2020 08 30.35726 02 53 19.05 +27 03 20.0 | 16.78R | 718 |
| 0029P | C2020 08 30.35878 02 53 19.06 +27 03 20.2 | 16.84R | 718 |
| 0029P | C2020 08 30.36031 02 53 19.06 +27 03 20.6 | 16.79R | 718 |
| 0029P | C2020 08 30.53445 02 53 19.37 +27 03 41.0 | 16.85R | F65 5.4" 2.0-m 120s |
| 0029P | C2020 08 30.53603 02 53 19.40 +27 03 41.1 | 16.83R | F65 |
| 0029P | C2020 08 30.53762 02 53 19.38 +27 03 41.4 | 16.83R | F65 |
| 0029P | C2020 08 30.53920 02 53 19.38 +27 03 41.7 | 16.81R | F65 |
| 0029P | C2020 08 30.54079 02 53 19.39 +27 03 41.8 | 16.83R | F65 |
| 0029P | C2020 08 30.54237 02 53 19.39 +27 03 41.9 | 16.82R | F65 |
| 0029P | C2020 08 31.54997 02 53 20.91 +27 05 34.4 | 16.82R | F65 5.4" 2.0-m 120s |
| 0029P | C2020 08 31.55155 02 53 20.90 +27 05 34.6 | 16.77R | F65 |
| 0029P | C2020 08 31.55314 02 53 20.90 +27 05 34.7 | 16.80R | F65 |
| 0029P | C2020 08 31.55472 02 53 20.91 +27 05 34.9 | 16.78R | F65 |
| 0029P | C2020 08 31.55630 02 53 20.91 +27 05 35.0 | 16.79R | F65 |
| 0029P | C2020 08 31.55789 02 53 20.90 +27 05 35.3 | 16.82R | F65 |
| 0029P 3x120s no filter | KC2020 08 31.29036 02 53 20.66 +27 05 04.6 | 16.80R | 718 5.2" 0.35-m |
| 0029P 4x120s | KC2020 08 31.29571 02 53 20.64 +27 05 05.4 | 16.77R | 718 5.2" 0.35-m |
| 0029P 3x120s | KC2020 08 31.30105 02 53 20.64 +27 05 06.0 | 16.79R | 718 5.2" 0.35-m |
| 0029P | C2020 08 31.61403 02 53 20.92 +27 05 41.7 | 16.79R | F65 5.4" 2.0-m 120s |

| | | | | | | | | | | | |
|---|--------|----|----------|----|----|-------|-----|----|------|--------|---------------------|
| 0029P | C2020 | 08 | 31.61564 | 02 | 53 | 20.93 | +27 | 05 | 41.6 | 16.79R | F65 |
| 0029P | C2020 | 08 | 31.61722 | 02 | 53 | 20.94 | +27 | 05 | 41.8 | 16.81R | F65 |
| 0029P | C2020 | 08 | 31.61880 | 02 | 53 | 20.93 | +27 | 05 | 42.0 | 16.79R | F65 |
| 0029P | C2020 | 08 | 31.62039 | 02 | 53 | 20.93 | +27 | 05 | 42.2 | 16.80R | F65 |
| 0029P | C2020 | 08 | 31.62196 | 02 | 53 | 20.94 | +27 | 05 | 42.3 | 16.81R | F65 |
| **mini-outburst at 2020 08 31.80 +/-0.08 16.80R => 16.48R | | | | | | | | | | | |
| 0029P | KC2020 | 08 | 31.91909 | 02 | 53 | 21.23 | +27 | 06 | 13.3 | 16.64R | I81 5.1" 0.35-m |
| 5x60s +/-0.05 | | | | | | | | | | | |
| 0029P | KC2020 | 08 | 31.92269 | 02 | 53 | 21.31 | +27 | 06 | 13.7 | 16.56R | I81 |
| 0029P | KC2020 | 08 | 31.92637 | 02 | 53 | 21.28 | +27 | 06 | 14.0 | 16.49R | I81 |
| 0029P | KC2020 | 08 | 31.92997 | 02 | 53 | 21.28 | +27 | 06 | 14.2 | 16.53R | I81 |
| 0029P | KC2020 | 08 | 31.97829 | 02 | 53 | 21.36 | +27 | 06 | 19.7 | 16.59R | I81 |
| 0029P | KC2020 | 08 | 31.98189 | 02 | 53 | 21.33 | +27 | 06 | 20.4 | 16.54R | I81 |
| 0029P | KC2020 | 08 | 31.95095 | | | | | | | 16.62R | Z80 5.6" No filter |
| +/- 0.06 mag 120x10s | | | | | | | | | | | |
| 0029P | KC2020 | 08 | 31.95624 | 02 | 53 | 21.32 | +27 | 06 | 17.9 | 16.45R | 204 5.6" |
| 0029P | KC2020 | 09 | 01.06392 | 02 | 53 | 21.39 | +27 | 06 | 29.8 | 16.55R | 204 |
| 0029P | KC2020 | 09 | 01.33846 | 02 | 53 | 21.61 | +27 | 06 | 59.3 | 16.48R | 718 5.2" 0.35-m |
| 3x120s | | | | | | | | | | | |
| 0029P | KC2020 | 09 | 01.34450 | 02 | 53 | 21.60 | +27 | 06 | 59.9 | 16.51R | 718 5.2" 0.35-m |
| 4x120s | | | | | | | | | | | |
| 0029P | KC2020 | 09 | 01.34916 | 02 | 53 | 21.59 | +27 | 07 | 00.5 | 16.50R | 718 5.2" 0.35-m |
| 3x120s | | | | | | | | | | | |
| 0029P | KC2020 | 09 | 01.70748 | 02 | 53 | 21.71 | +27 | 07 | 41.1 | 16.51R | E10 5.4" 2.0-m |
| 4x120s bright sky | | | | | | | | | | | |
| 0029P | KC2020 | 09 | 01.92448 | 02 | 53 | 21.81 | +27 | 08 | 01.1 | 16.42R | J77 5.4" 0.35-m |
| 4x60s r filter moonlight +/-0.10 | | | | | | | | | | | |
| 0029P | KC2020 | 09 | 02.10744 | | | | | | | 16.47R | 970 5.8" 0.28-m |
| 5x120s +/-0.04 | | | | | | | | | | | |
| 0029P | KC2020 | 09 | 02.34948 | 02 | 53 | 21.83 | +27 | 08 | 46.9 | 16.46R | 718 5.1" 0.35-m |
| 3x120s | | | | | | | | | | | |
| 0029P | KC2020 | 09 | 02.35483 | 02 | 53 | 21.83 | +27 | 08 | 47.4 | 16.49R | 718 5.1" 0.35-m |
| 4x120s | | | | | | | | | | | |
| 0029P | KC2020 | 09 | 02.36017 | 02 | 53 | 21.82 | +27 | 08 | 47.7 | 16.46R | 718 5.1" 0.35-m |
| 3x120s | | | | | | | | | | | |
| 0029P | C2020 | 09 | 02.46492 | 02 | 53 | 21.80 | +27 | 08 | 59.5 | 16.43R | T03 5.13" 0.4-m 90s |
| r filter | | | | | | | | | | | |
| 0029P | C2020 | 09 | 02.46612 | 02 | 53 | 21.80 | +27 | 08 | 59.6 | 16.40R | T03 |
| 0029P | C2020 | 09 | 02.46851 | 02 | 53 | 21.78 | +27 | 09 | 00.0 | 16.44R | T03 |
| 0029P | C2020 | 09 | 02.46971 | 02 | 53 | 21.74 | +27 | 09 | 00.1 | 16.50R | T03 |
| 0029P | KC2020 | 09 | 03.15368 | 02 | 53 | 21.39 | +27 | 10 | 11.0 | 16.54R | L09 5.7" 0.4-m |
| 3x90s r filter | | | | | | | | | | | |
| 0029P | KC2020 | 09 | 03.15711 | 02 | 53 | 21.34 | +27 | 10 | 11.7 | 16.48R | L09 |
| 0029P | dC2020 | 09 | 03.31201 | 02 | 53 | 21.33 | +27 | 10 | 25.9 | 16.55R | C. S. Morris 4.84" |
| 0029P | dC2020 | 09 | 03.31914 | 02 | 53 | 21.34 | +27 | 10 | 26.9 | 16.49R | C. S. Morris 4.84" |
| 0029P | dC2020 | 09 | 03.32353 | 02 | 53 | 21.32 | +27 | 10 | 27.3 | 16.59R | C. S. Morris 4.84" |
| 0029P | dC2020 | 09 | 03.32831 | 02 | 53 | 21.34 | +27 | 10 | 28.1 | 16.55R | C. S. Morris 4.84" |
| 0029P | C2020 | 09 | 03.31893 | 02 | 53 | 21.35 | +27 | 10 | 26.5 | 16.51R | 718 |
| 0029P | C2020 | 09 | 03.32045 | 02 | 53 | 21.34 | +27 | 10 | 26.8 | 16.55R | 718 |
| 0029P | C2020 | 09 | 03.32198 | 02 | 53 | 21.32 | +27 | 10 | 27.0 | 16.54R | 718 |
| 0029P | C2020 | 09 | 03.32351 | 02 | 53 | 21.32 | +27 | 10 | 27.1 | 16.58R | 718 |
| 0029P | C2020 | 09 | 03.32504 | 02 | 53 | 21.34 | +27 | 10 | 27.0 | 16.62R | 718 |
| 0029P | C2020 | 09 | 03.32657 | 02 | 53 | 21.31 | +27 | 10 | 27.6 | 16.53R | 718 |
| 0029P | C2020 | 09 | 03.32810 | 02 | 53 | 21.32 | +27 | 10 | 27.5 | 16.57R | 718 |
| 0029P | C2020 | 09 | 03.32962 | 02 | 53 | 21.32 | +27 | 10 | 27.5 | 16.54R | 718 |
| 0029P | C2020 | 09 | 03.33115 | 02 | 53 | 21.31 | +27 | 10 | 27.6 | 16.55R | 718 |
| 0029P | C2020 | 09 | 03.33268 | 02 | 53 | 21.32 | +27 | 10 | 28.2 | 16.51R | 718 |
| **outburst at 2020 09 03.67 +/-0.27 16.54R => 15.47R | | | | | | | | | | | |
| 0029P | KC2020 | 09 | 04.00740 | 02 | 53 | 20.56 | +27 | 11 | 36.1 | 15.48R | Z10 5.5" 0.32-m |
| 6x60s no filter | | | | | | | | | | | |
| 0029P | KC2020 | 09 | 04.01206 | 02 | 53 | 20.54 | +27 | 11 | 36.3 | 15.49R | Z10 |

| | | | | | | | | | | | |
|---|--------|----|----------|----|----|-------|-----|----|------|--------|------------------|
| 0029P | KC2020 | 09 | 04.01672 | 02 | 53 | 20.54 | +27 | 11 | 36.4 | 15.50R | Z10 |
| 0029P | C2020 | 09 | 04.06696 | 02 | 53 | 20.42 | +27 | 11 | 43.9 | 15.51R | L09 5.7" 0.4-m |
| 3x90s r filter | | | | | | | | | | | |
| 0029P | C2020 | 09 | 04.07038 | 02 | 53 | 20.39 | +27 | 11 | 44.3 | 15.44R | L09 |
| 0029P | C2020 | 09 | 04.31391 | 02 | 53 | 20.10 | +27 | 12 | 06.2 | 15.44R | 718 5.1" 0.35-m |
| 3x120s | | | | | | | | | | | |
| 0029P | C2020 | 09 | 04.31850 | 02 | 53 | 20.09 | +27 | 12 | 06.5 | 15.46R | 718 |
| 0029P | C2020 | 09 | 04.32308 | 02 | 53 | 20.05 | +27 | 12 | 07.3 | 15.43R | 718 |
| 0029P | KC2020 | 09 | 04.91745 | 02 | 53 | 18.99 | +27 | 13 | 04.9 | 15.46N | L27 6.6" |
| 0029P | KC2020 | 09 | 04.96430 | 02 | 53 | 18.91 | +27 | 13 | 09.5 | 15.41N | L27 |
| 0029P | KC2020 | 09 | 05.01081 | 02 | 53 | 18.80 | +27 | 13 | 14.1 | 15.37N | L27 |
| 0029P | KC2020 | 09 | 05.05736 | 02 | 53 | 18.67 | +27 | 13 | 18.6 | 15.38N | L27 |
| 0029P | KC2020 | 09 | 05.10484 | 02 | 53 | 18.52 | +27 | 13 | 23.4 | 15.40N | L27 |
| 0029P | KC2020 | 09 | 05.15167 | 02 | 53 | 18.44 | +27 | 13 | 28.0 | 15.30N | L27 |
| 0029P | KC2020 | 09 | 04.99003 | 02 | 53 | 18.82 | +27 | 13 | 12.0 | 15.50R | 204 |
| 0029P | KC2020 | 09 | 05.07736 | 02 | 53 | 18.60 | +27 | 13 | 20.5 | 15.46R | 204 |
| 0029P | KC2020 | 09 | 05.30668 | 02 | 53 | 18.17 | +27 | 13 | 42.0 | 15.53R | 718 5.2" 0.35-m |
| 3x120s | | | | | | | | | | | |
| 0029P | KC2020 | 09 | 05.31272 | 02 | 53 | 18.16 | +27 | 13 | 42.9 | 15.55R | 718 5.2" 0.35-m |
| 4x120s | | | | | | | | | | | |
| 0029P | KC2020 | 09 | 05.31737 | 02 | 53 | 18.11 | +27 | 13 | 43.7 | 15.52R | 718 5.2" 0.35-m |
| 3x120s | | | | | | | | | | | |
| 0029P | KC2020 | 09 | 05.92723 | 02 | 53 | 16.57 | +27 | 14 | 41.0 | 15.72R | B96 4.96" 0.4-m |
| 0029P | C2020 | 09 | 05.96105 | 02 | 53 | 16.50 | +27 | 14 | 43.6 | 15.72R | Z10 5.5" 6x60s |
| 0029P | C2020 | 09 | 05.96572 | 02 | 53 | 16.55 | +27 | 14 | 43.8 | 15.87R | Z10 |
| 0029P | C2020 | 09 | 05.97038 | 02 | 53 | 16.48 | +27 | 14 | 44.2 | 15.82R | Z10 |
| 0029P | C2020 | 09 | 05.97583 | 02 | 53 | 16.47 | +27 | 14 | 45.0 | 15.76R | Z10 |
| 0029P | KC2020 | 09 | 06.03970 | | | | | | | 15.78R | 970 5.8" |
| 0029P | KC2020 | 09 | 06.04736 | | | | | | | 15.76R | 970 |
| 0029P | KC2020 | 09 | 06.31208 | 02 | 53 | 15.48 | +27 | 15 | 16.7 | 15.75R | 718 5.2" 0.35-m |
| 3x120s | | | | | | | | | | | |
| 0029P | KC2020 | 09 | 06.31744 | 02 | 53 | 15.48 | +27 | 15 | 16.1 | 15.80R | 718 5.2" 0.35-m |
| 4x120s | | | | | | | | | | | |
| 0029P | KC2020 | 09 | 06.32279 | 02 | 53 | 15.45 | +27 | 15 | 17.2 | 15.80R | 718 5.2" 0.35-m |
| 3x120s | | | | | | | | | | | |
| 0029P | KC2020 | 09 | 07.26753 | 02 | 53 | 12.29 | +27 | 16 | 42.8 | 15.97R | V38 |
| 0029P | KC2020 | 09 | 08.26415 | 02 | 53 | 08.31 | +27 | 18 | 09.7 | 16.09R | V38 |
| 0029P | KC2020 | 09 | 08.95981 | | | | | | | 15.93R | 970 5.8" |
| 0029P | KC2020 | 09 | 08.96364 | | | | | | | 16.02R | 970 |
| 0029P | KC2020 | 09 | 09.01775 | | | | | | | 16.16R | 970 |
| 0029P | KC2020 | 09 | 09.32844 | 02 | 53 | 03.06 | +27 | 19 | 38.0 | 16.31R | 718 5.2" 0.35-m |
| 3x120s | | | | | | | | | | | |
| 0029P | KC2020 | 09 | 09.33378 | 02 | 53 | 03.06 | +27 | 19 | 38.6 | 16.34R | 718 5.2" 0.35-m |
| 4x120s | | | | | | | | | | | |
| 0029P | KC2020 | 09 | 09.33913 | 02 | 53 | 03.00 | +27 | 19 | 39.3 | 16.35R | 718 5.2" 0.35-m |
| 3x120s | | | | | | | | | | | |
| 0029P | C2020 | 09 | 09.40699 | 02 | 53 | 02.70 | +27 | 19 | 44.9 | 16.32R | T03 |
| 0029P | C2020 | 09 | 09.40820 | 02 | 53 | 02.70 | +27 | 19 | 45.1 | 16.27R | T03 |
| 0029P | C2020 | 09 | 09.40940 | 02 | 53 | 02.68 | +27 | 19 | 45.2 | 16.29R | T03 |
| 0029P | C2020 | 09 | 09.41060 | 02 | 53 | 02.67 | +27 | 19 | 45.3 | 16.26R | T03 |
| 0029P | C2020 | 09 | 09.41179 | 02 | 53 | 02.67 | +27 | 19 | 45.0 | 16.36R | T03 |
| **mini-outburst at 2020 09 09.59 +/-0.01 16.30R => 15.78R | | | | | | | | | | | |
| 0029P | KC2020 | 09 | 09.54322 | 02 | 53 | 02.03 | +27 | 19 | 57.9 | 16.20R | E94 6.15" 0.41-m |
| 20x60s RM measured | | | | | | | | | | | |
| 0029P | KC2020 | 09 | 09.55978 | 02 | 53 | 01.71 | +27 | 19 | 58.6 | 16.21R | E94 |
| 0029P | KC2020 | 09 | 09.57694 | 02 | 53 | 01.77 | +27 | 19 | 59.8 | 16.17R | E94 |
| 0029P | KC2020 | 09 | 09.59853 | 02 | 53 | 01.63 | +27 | 20 | 00.9 | 16.13R | E94 |
| 0029P | KC2020 | 09 | 09.61508 | 02 | 53 | 01.53 | +27 | 20 | 03.2 | 15.78R | E94 |
| 0029P | KC2020 | 09 | 09.63164 | 02 | 53 | 01.42 | +27 | 20 | 05.3 | 15.77R | E94 |
| 0029P | C2020 | 09 | 09.64834 | 02 | 52 | 19.30 | +27 | 24 | 01.4 | 15.79R | E94 |
| 0029P | KC2020 | 09 | 09.68284 | 02 | 53 | 01.12 | +27 | 20 | 09.2 | 15.66R | E94 |

| | | | | | | | | | | | |
|---------------------|--------|----|----------|----|----|-------|-----|----|------|--------|--------------------|
| 0029P | KC2020 | 09 | 09.69941 | 02 | 53 | 01.01 | +27 | 20 | 09.9 | 15.62R | E94 |
| 0029P | KC2020 | 09 | 09.95282 | | | | | | | 15.83R | 970 5.8" |
| 0029P | KC2020 | 09 | 10.02718 | | | | | | | 15.81R | 970 |
| 0029P | KC2020 | 09 | 10.05595 | | | | | | | 15.83R | 970 |
| 0029P | KC2020 | 09 | 09.97553 | | | | | | | 15.85R | Z80 5.6" No filter |
| +/- 0.04 mag 92x10s | | | | | | | | | | | |
| 0029P | C2020 | 09 | 09.99888 | 02 | 52 | 59.41 | +27 | 20 | 31.7 | 15.66R | I81 |
| 0029P | C2020 | 09 | 09.99959 | 02 | 52 | 59.39 | +27 | 20 | 31.8 | 15.79R | I81 |
| 0029P | C2020 | 09 | 10.00030 | 02 | 52 | 59.38 | +27 | 20 | 31.7 | 15.74R | I81 |
| 0029P | C2020 | 09 | 10.00101 | 02 | 52 | 59.41 | +27 | 20 | 31.9 | 15.66R | I81 |
| 0029P | C2020 | 09 | 10.00172 | 02 | 52 | 59.38 | +27 | 20 | 32.0 | 15.59R | I81 |
| 0029P | C2020 | 09 | 10.00243 | 02 | 52 | 59.39 | +27 | 20 | 32.0 | 15.76R | I81 |
| 0029P | C2020 | 09 | 10.00111 | 02 | 52 | 59.41 | +27 | 20 | 32.2 | 15.80R | J77 5.44" 0.35-m |
| 10x60s r filter | | | | | | | | | | | |
| 0029P | C2020 | 09 | 10.00792 | 02 | 52 | 59.37 | +27 | 20 | 32.4 | 15.78R | J77 |
| 0029P | C2020 | 09 | 10.08851 | 02 | 52 | 58.84 | +27 | 20 | 41.3 | 15.75R | L09 |
| 0029P | C2020 | 09 | 10.08965 | 02 | 52 | 58.83 | +27 | 20 | 41.3 | 15.80R | L09 |
| 0029P | C2020 | 09 | 10.09079 | 02 | 52 | 58.82 | +27 | 20 | 41.4 | 15.75R | L09 |
| 0029P | C2020 | 09 | 10.09422 | 02 | 52 | 58.82 | +27 | 20 | 41.7 | 15.82R | L09 |
| 0029P | KC2020 | 09 | 10.87551 | 02 | 52 | 54.15 | +27 | 21 | 40.0 | 15.56R | C10 6.5" |
| 0029P | KC2020 | 09 | 10.96034 | 02 | 52 | 53.61 | +27 | 21 | 46.4 | 15.72R | C10 |
| 0029P | KC2020 | 09 | 11.06496 | 02 | 52 | 52.91 | +27 | 21 | 54.6 | 15.76R | C10 |
| 0029P | KC2020 | 09 | 10.94613 | | | | | | | 15.80R | 970 5.8" |
| 0029P | KC2020 | 09 | 11.03981 | | | | | | | 15.88R | 970 |
| 0029P | KC2020 | 09 | 11.05826 | | | | | | | 15.88R | 970 |
| 0029P | C2020 | 09 | 11.30481 | 02 | 52 | 51.37 | +27 | 22 | 12.9 | 15.89R | 718 5.2" |
| 0029P | C2020 | 09 | 11.30634 | 02 | 52 | 51.36 | +27 | 22 | 12.6 | 15.89R | 718 |
| 0029P | C2020 | 09 | 11.30787 | 02 | 52 | 51.35 | +27 | 22 | 12.8 | 15.88R | 718 |
| 0029P | C2020 | 09 | 11.30940 | 02 | 52 | 51.32 | +27 | 22 | 12.9 | 15.91R | 718 |
| 0029P | C2020 | 09 | 11.31093 | 02 | 52 | 51.34 | +27 | 22 | 13.5 | 15.88R | 718 |
| 0029P | C2020 | 09 | 11.31246 | 02 | 52 | 51.32 | +27 | 22 | 12.9 | 15.96R | 718 |
| 0029P | C2020 | 09 | 11.31399 | 02 | 52 | 51.32 | +27 | 22 | 13.1 | 15.96R | 718 |
| 0029P | C2020 | 09 | 11.31552 | 02 | 52 | 51.30 | +27 | 22 | 13.5 | 15.95R | 718 |
| 0029P | C2020 | 09 | 11.31704 | 02 | 52 | 51.30 | +27 | 22 | 13.5 | 15.89R | 718 |
| 0029P | C2020 | 09 | 11.31857 | 02 | 52 | 51.27 | +27 | 22 | 13.4 | 15.92R | 718 |
| 0029P | C2020 | 09 | 11.39737 | 02 | 52 | 50.77 | +27 | 22 | 20.1 | 16.25R | T03 5.7" |
| 0029P | C2020 | 09 | 11.39856 | 02 | 52 | 50.76 | +27 | 22 | 20.3 | 16.11R | T03 |
| 0029P | C2020 | 09 | 11.39977 | 02 | 52 | 50.75 | +27 | 22 | 20.3 | 16.05R | T03 |
| 0029P | C2020 | 09 | 11.40097 | 02 | 52 | 50.74 | +27 | 22 | 20.4 | 16.13R | T03 |
| 0029P | C2020 | 09 | 11.40217 | 02 | 52 | 50.75 | +27 | 22 | 20.5 | 16.15R | T03 |
| 0029P | C2020 | 09 | 11.40336 | 02 | 52 | 50.73 | +27 | 22 | 20.5 | 16.17R | T03 |
| 0029P | KC2020 | 09 | 11.40037 | 02 | 52 | 50.74 | +27 | 22 | 20.3 | 16.16R | T03 5.7" 0.4-m |
| 6x90s r | | | | | | | | | | | |
| 0029P | KC2020 | 09 | 11.88893 | 02 | 52 | 47.37 | +27 | 22 | 55.7 | 15.91R | C10 6.5" |
| 0029P | KC2020 | 09 | 11.93797 | 02 | 52 | 46.98 | +27 | 22 | 59.0 | 15.91R | C10 |
| 0029P | KC2020 | 09 | 11.98687 | 02 | 52 | 46.65 | +27 | 23 | 02.9 | 15.95R | C10 |
| 0029P | KC2020 | 09 | 12.03642 | 02 | 52 | 46.28 | +27 | 23 | 06.3 | 15.92R | C10 |
| 0029P | KC2020 | 09 | 12.08555 | 02 | 52 | 45.89 | +27 | 23 | 10.1 | 15.94R | C10 |
| 0029P | KC2020 | 09 | 12.13641 | 02 | 52 | 45.51 | +27 | 23 | 13.9 | 15.96R | C10 |
| 0029P | KC2020 | 09 | 12.17337 | 02 | 52 | 45.22 | +27 | 23 | 16.2 | 15.91R | C10 |
| 0029P | KC2020 | 09 | 11.95329 | | | | | | | 16.06R | 970 5.8" |
| 0029P | KC2020 | 09 | 12.00316 | | | | | | | 16.10R | 970 |
| 0029P | KC2020 | 09 | 12.03841 | | | | | | | 16.12R | 970 |
| 0029P | KC2020 | 09 | 12.07366 | | | | | | | 16.15R | 970 |
| 0029P | KC2020 | 09 | 12.10910 | | | | | | | 16.09R | 970 |
| 0029P | C2020 | 09 | 11.95355 | 02 | 52 | 46.89 | +27 | 23 | 00.2 | 16.08R | I81 5.2" |
| 0029P | C2020 | 09 | 11.95426 | 02 | 52 | 46.89 | +27 | 22 | 59.4 | 16.03R | I81 |
| 0029P | C2020 | 09 | 11.95497 | 02 | 52 | 46.87 | +27 | 23 | 00.0 | 16.08R | I81 |
| 0029P | C2020 | 09 | 11.95568 | 02 | 52 | 46.83 | +27 | 23 | 00.1 | 16.04R | I81 |
| 0029P | C2020 | 09 | 11.95639 | 02 | 52 | 46.83 | +27 | 23 | 00.3 | 16.09R | I81 |
| 0029P | C2020 | 09 | 11.95710 | 02 | 52 | 46.86 | +27 | 22 | 59.9 | 16.05R | I81 |
| 0029P | C2020 | 09 | 11.95781 | 02 | 52 | 46.83 | +27 | 23 | 00.4 | 16.02R | I81 |
| 0029P | C2020 | 09 | 11.95853 | 02 | 52 | 46.83 | +27 | 22 | 59.9 | 16.12R | I81 |
| 0029P | C2020 | 09 | 11.95924 | 02 | 52 | 46.85 | +27 | 23 | 01.1 | 16.14R | I81 |

| | | | | | | | | | | | |
|-------|--------|----|----------|----|----|-------|-----|----|------|--------|----------------|
| 0029F | C2020 | 09 | 11.95995 | 02 | 52 | 46.82 | +27 | 23 | 00.6 | 16.09R | I81 |
| 0029F | C2020 | 09 | 11.96066 | 02 | 52 | 46.83 | +27 | 23 | 00.5 | 16.05R | I81 |
| 0029F | C2020 | 09 | 11.96137 | 02 | 52 | 46.80 | +27 | 23 | 00.6 | 16.01R | I81 |
| 0029F | C2020 | 09 | 11.96208 | 02 | 52 | 46.80 | +27 | 23 | 01.0 | 16.06R | I81 |
| 0029F | C2020 | 09 | 11.96279 | 02 | 52 | 46.81 | +27 | 23 | 00.7 | 16.06R | I81 |
| 0029F | C2020 | 09 | 11.96350 | 02 | 52 | 46.84 | +27 | 23 | 00.7 | 16.11R | I81 |
| 0029F | C2020 | 09 | 11.96421 | 02 | 52 | 46.83 | +27 | 23 | 00.2 | 16.06R | I81 |
| 0029F | C2020 | 09 | 11.96492 | 02 | 52 | 46.75 | +27 | 23 | 01.1 | 16.05R | I81 |
| 0029F | C2020 | 09 | 11.96563 | 02 | 52 | 46.81 | +27 | 23 | 01.2 | 16.11R | I81 |
| 0029F | C2020 | 09 | 11.96635 | 02 | 52 | 46.78 | +27 | 23 | 00.9 | 16.00R | I81 |
| 0029F | C2020 | 09 | 11.96706 | 02 | 52 | 46.75 | +27 | 23 | 01.4 | 16.09R | I81 |
| 0029F | C2020 | 09 | 12.04586 | 02 | 52 | 46.18 | +27 | 23 | 08.6 | 16.02R | L09 5.7" |
| 0029F | C2020 | 09 | 12.28287 | 02 | 52 | 44.53 | +27 | 23 | 23.9 | 16.18R | 718 5.2" |
| 0029F | C2020 | 09 | 12.28440 | 02 | 52 | 44.48 | +27 | 23 | 24.2 | 16.11R | 718 |
| 0029F | C2020 | 09 | 12.28593 | 02 | 52 | 44.46 | +27 | 23 | 24.5 | 16.14R | 718 |
| 0029F | C2020 | 09 | 12.28746 | 02 | 52 | 44.48 | +27 | 23 | 24.4 | 16.12R | 718 |
| 0029F | C2020 | 09 | 12.28898 | 02 | 52 | 44.49 | +27 | 23 | 24.5 | 16.12R | 718 |
| 0029F | C2020 | 09 | 12.29051 | 02 | 52 | 44.48 | +27 | 23 | 24.8 | 16.17R | 718 |
| 0029F | C2020 | 09 | 12.29204 | 02 | 52 | 44.46 | +27 | 23 | 24.9 | 16.13R | 718 |
| 0029F | C2020 | 09 | 12.29357 | 02 | 52 | 44.45 | +27 | 23 | 24.9 | 16.14R | 718 |
| 0029F | C2020 | 09 | 12.29510 | 02 | 52 | 44.43 | +27 | 23 | 25.2 | 16.17R | 718 |
| 0029F | C2020 | 09 | 12.29663 | 02 | 52 | 44.42 | +27 | 23 | 24.8 | 16.11R | 718 |
| 0029F | C2020 | 09 | 12.45099 | 02 | 52 | 43.25 | +27 | 23 | 36.7 | 16.27R | T04 5.7" |
| 0029F | C2020 | 09 | 12.45254 | 02 | 52 | 43.25 | +27 | 23 | 36.8 | 16.26R | T04 |
| 0029F | C2020 | 09 | 12.45408 | 02 | 52 | 43.24 | +27 | 23 | 37.0 | 16.26R | T04 |
| 0029F | C2020 | 09 | 12.45563 | 02 | 52 | 43.23 | +27 | 23 | 37.0 | 16.23R | T04 |
| 0029F | KC2020 | 09 | 12.94351 | | | | | | | 16.10R | 970 5.8" |
| 0029F | KC2020 | 09 | 13.01487 | | | | | | | 16.12R | 970 |
| 0029F | KC2020 | 09 | 13.06907 | | | | | | | 16.28R | 970 |
| 0029F | KC2020 | 09 | 13.09108 | | | | | | | 16.23R | 970 |
| 0029F | KC2020 | 09 | 12.87668 | 02 | 52 | 40.01 | +27 | 24 | 05.2 | 16.07R | C10 6.5" |
| 0029F | KC2020 | 09 | 12.92543 | 02 | 52 | 39.61 | +27 | 24 | 09.0 | 16.00R | C10 |
| 0029F | KC2020 | 09 | 12.97419 | 02 | 52 | 39.24 | +27 | 24 | 12.4 | 16.01R | C10 |
| 0029F | KC2020 | 09 | 13.02456 | 02 | 52 | 38.80 | +27 | 24 | 15.9 | 15.93R | C10 |
| 0029F | KC2020 | 09 | 13.07375 | 02 | 52 | 38.40 | +27 | 24 | 19.6 | 16.08R | C10 |
| 0029F | KC2020 | 09 | 13.12453 | 02 | 52 | 37.98 | +27 | 24 | 22.9 | 16.07R | C10 |
| 0029F | KC2020 | 09 | 13.17636 | 02 | 52 | 37.57 | +27 | 24 | 26.5 | 16.01R | C10 |
| 0029F | KC2020 | 09 | 13.04322 | 02 | 52 | 38.66 | +27 | 24 | 17.4 | 16.21R | 204 5.6" |
| 0029F | KC2020 | 09 | 13.14363 | 02 | 52 | 37.83 | +27 | 24 | 24.3 | 16.26R | 204 |
| 0029F | C2020 | 09 | 13.27086 | 02 | 52 | 36.87 | +27 | 24 | 32.8 | 16.34R | 718 5.2" |
| 0029F | C2020 | 09 | 13.27239 | 02 | 52 | 36.87 | +27 | 24 | 33.0 | 16.31R | 718 |
| 0029F | C2020 | 09 | 13.27391 | 02 | 52 | 36.84 | +27 | 24 | 33.7 | 16.46R | 718 |
| 0029F | C2020 | 09 | 13.27544 | 02 | 52 | 36.87 | +27 | 24 | 33.5 | 16.33R | 718 |
| 0029F | C2020 | 09 | 13.27697 | 02 | 52 | 36.83 | +27 | 24 | 33.1 | 16.30R | 718 |
| 0029F | C2020 | 09 | 13.27850 | 02 | 52 | 36.78 | +27 | 24 | 33.1 | 16.44R | 718 |
| 0029F | C2020 | 09 | 13.28002 | 02 | 52 | 36.83 | +27 | 24 | 33.1 | 16.46R | 718 |
| 0029F | C2020 | 09 | 13.28155 | 02 | 52 | 36.79 | +27 | 24 | 33.3 | 16.48R | 718 |
| 0029F | C2020 | 09 | 13.28308 | 02 | 52 | 36.79 | +27 | 24 | 33.6 | 16.42R | 718 |
| 0029F | C2020 | 09 | 13.28461 | 02 | 52 | 36.77 | +27 | 24 | 33.9 | 16.36R | 718 |
| 0029F | C2020 | 09 | 13.45090 | 02 | 52 | 35.40 | +27 | 24 | 45.6 | 16.36R | T04 5.7" |
| 0029F | C2020 | 09 | 13.45245 | 02 | 52 | 35.41 | +27 | 24 | 45.8 | 16.33R | T04 |
| 0029F | C2020 | 09 | 13.45400 | 02 | 52 | 35.39 | +27 | 24 | 45.9 | 16.37R | T04 |
| 0029F | C2020 | 09 | 13.45554 | 02 | 52 | 35.38 | +27 | 24 | 46.0 | 16.35R | T04 |
| 0029F | KC2020 | 09 | 13.86324 | 02 | 52 | 32.00 | +27 | 25 | 11.8 | 16.24R | C10 6.5" |
| 0029F | KC2020 | 09 | 13.91000 | 02 | 52 | 31.58 | +27 | 25 | 15.3 | 16.16R | C10 |
| 0029F | KC2020 | 09 | 13.95901 | 02 | 52 | 31.15 | +27 | 25 | 18.4 | 16.18R | C10 |
| 0029F | KC2020 | 09 | 14.00804 | 02 | 52 | 30.74 | +27 | 25 | 21.5 | 16.20R | C10 |
| 0029F | KC2020 | 09 | 14.05703 | 02 | 52 | 30.29 | +27 | 25 | 24.9 | 16.17R | C10 |
| 0029F | KC2020 | 09 | 14.10601 | 02 | 52 | 29.80 | +27 | 25 | 27.9 | 16.25R | C10 |
| 0029F | KC2020 | 09 | 14.17558 | 02 | 52 | 29.19 | +27 | 25 | 32.3 | 16.19R | C10 |
| 0029F | KC2020 | 09 | 13.93339 | | | | | | | 16.39R | 970 5.8" |
| 0029F | KC2020 | 09 | 14.02618 | | | | | | | 16.33R | 970 |
| 0029F | KC2020 | 09 | 14.02963 | | | | | | | 16.32R | 970 |
| 0029F | KC2020 | 09 | 14.07348 | | | | | | | 16.31R | 970 |
| 0029F | KC2020 | 09 | 14.07694 | | | | | | | 16.41R | 970 |
| 0029F | C2020 | 09 | 14.00060 | 02 | 52 | 30.79 | +27 | 25 | 21.3 | 16.46R | B96 5.0" Clear |

| | | | | | | | | | | | |
|---------------------|--------|----|----------|----|----|-------|-----|----|------|--------|--------------------|
| 0029P | C2020 | 09 | 14.00223 | 02 | 52 | 30.74 | +27 | 25 | 21.2 | 16.43R | B96 |
| 0029P | C2020 | 09 | 14.00387 | 02 | 52 | 30.75 | +27 | 25 | 21.2 | 16.34R | B96 |
| 0029P | C2020 | 09 | 14.00549 | 02 | 52 | 30.73 | +27 | 25 | 21.2 | 16.44R | B96 |
| 0029P | KC2020 | 09 | 14.00549 | 02 | 52 | 30.73 | +27 | 25 | 21.3 | 16.33R | B96 |
| 0029P | C2020 | 09 | 14.00712 | 02 | 52 | 30.72 | +27 | 25 | 21.4 | 16.29R | B96 |
| 0029P | C2020 | 09 | 14.00875 | 02 | 52 | 30.70 | +27 | 25 | 21.4 | 16.26R | B96 |
| 0029P | C2020 | 09 | 14.01037 | 02 | 52 | 30.67 | +27 | 25 | 21.6 | 16.36R | B96 |
| 0029P | C2020 | 09 | 14.01210 | 02 | 52 | 30.67 | +27 | 25 | 21.2 | 16.40R | B96 5.0" Rc |
| 0029P | C2020 | 09 | 14.01373 | 02 | 52 | 30.60 | +27 | 25 | 22.2 | 16.53R | B96 |
| 0029P | KC2020 | 09 | 14.01535 | 02 | 52 | 30.64 | +27 | 25 | 21.9 | 16.32R | B96 |
| 0029P | C2020 | 09 | 14.01536 | 02 | 52 | 30.64 | +27 | 25 | 22.2 | 16.10R | B96 |
| 0029P | C2020 | 09 | 14.01698 | 02 | 52 | 30.62 | +27 | 25 | 22.1 | 16.53R | B96 |
| 0029P | C2020 | 09 | 14.01861 | 02 | 52 | 30.60 | +27 | 25 | 22.1 | 16.68R | B96 |
| 0029P | C2020 | 09 | 14.30383 | 02 | 52 | 28.18 | +27 | 25 | 40.9 | 16.52R | 718 5.2" |
| 0029P | C2020 | 09 | 14.30535 | 02 | 52 | 28.18 | +27 | 25 | 40.8 | 16.42R | 718 |
| 0029P | C2020 | 09 | 14.30688 | 02 | 52 | 28.16 | +27 | 25 | 40.9 | 16.50R | 718 |
| 0029P | C2020 | 09 | 14.30841 | 02 | 52 | 28.11 | +27 | 25 | 41.3 | 16.44R | 718 |
| 0029P | C2020 | 09 | 14.30994 | 02 | 52 | 28.17 | +27 | 25 | 41.8 | 16.54R | 718 |
| 0029P | C2020 | 09 | 14.31147 | 02 | 52 | 28.22 | +27 | 25 | 40.9 | 16.59R | 718 |
| 0029P | C2020 | 09 | 14.31300 | 02 | 52 | 28.06 | +27 | 25 | 41.0 | 16.33R | 718 |
| 0029P | C2020 | 09 | 14.31452 | 02 | 52 | 28.07 | +27 | 25 | 41.7 | 16.33R | 718 |
| 0029P | C2020 | 09 | 14.31605 | 02 | 52 | 28.08 | +27 | 25 | 42.1 | 16.42R | 718 |
| 0029P | C2020 | 09 | 14.31758 | 02 | 52 | 28.05 | +27 | 25 | 42.0 | 16.50R | 718 |
| 0029P | C2020 | 09 | 14.45094 | 02 | 52 | 26.88 | +27 | 25 | 51.0 | 16.38R | T04 5.7" |
| 0029P | C2020 | 09 | 14.45249 | 02 | 52 | 26.85 | +27 | 25 | 51.0 | 16.51R | T04 |
| 0029P | C2020 | 09 | 14.45403 | 02 | 52 | 26.83 | +27 | 25 | 51.1 | 16.45R | T04 |
| 0029P | C2020 | 09 | 14.45558 | 02 | 52 | 26.81 | +27 | 25 | 51.2 | 16.42R | T04 |
| 0029P | C2020 | 09 | 14.68118 | 02 | 52 | 24.67 | +27 | 26 | 06.8 | 16.52R | E94 6.15" 0.41-m |
| 10x60s RM star near | | | | | | | | | | | |
| 0029P | C2020 | 09 | 14.69101 | 02 | 52 | 24.59 | +27 | 26 | 07.5 | 16.58R | E94 6.15" 0.41-m |
| 10x60s RM star near | | | | | | | | | | | |
| 0029P | KC2020 | 09 | 14.83553 | 02 | 52 | 23.24 | +27 | 26 | 11.5 | 16.41R | J77 5.44" 10x60s r |
| 0029P | KC2020 | 09 | 14.84270 | 02 | 52 | 23.31 | +27 | 26 | 14.2 | 16.44R | J77 |
| 0029P | KC2020 | 09 | 14.85113 | 02 | 52 | 23.20 | +27 | 26 | 14.9 | 16.33R | J77 |
| 0029P | KC2020 | 09 | 14.85829 | 02 | 52 | 23.17 | +27 | 26 | 15.0 | 16.52R | J77 |
| 0029P | KC2020 | 09 | 14.86545 | 02 | 52 | 23.11 | +27 | 26 | 15.4 | 16.56R | J77 |
| 0029P | KC2020 | 09 | 14.87425 | 02 | 52 | 22.99 | +27 | 26 | 16.5 | 16.48R | J77 |
| 0029P | KC2020 | 09 | 14.88141 | 02 | 52 | 22.94 | +27 | 26 | 16.6 | 16.40R | J77 |
| 0029P | KC2020 | 09 | 14.88858 | 02 | 52 | 22.89 | +27 | 26 | 17.3 | 16.45R | J77 |
| 0029P | KC2020 | 09 | 14.92597 | | | | | | | 16.36R | 970 5.8" |
| 0029P | KC2020 | 09 | 14.97493 | | | | | | | 16.42R | 970 |
| 0029P | KC2020 | 09 | 15.01214 | | | | | | | 16.33R | 970 |
| 0029P | KC2020 | 09 | 15.05814 | | | | | | | 16.33R | 970 |
| 0029P | KC2020 | 09 | 15.08464 | | | | | | | 16.41R | 970 |
| 0029P | KC2020 | 09 | 15.08617 | | | | | | | 16.43R | 970 |
| 0029P | KC2020 | 09 | 14.87313 | 02 | 52 | 23.00 | +27 | 26 | 16.3 | 16.34R | C10 6.5" |
| 0029P | KC2020 | 09 | 14.92180 | 02 | 52 | 22.59 | +27 | 26 | 19.4 | 16.24R | C10 |
| 0029P | KC2020 | 09 | 14.97045 | 02 | 52 | 22.10 | +27 | 26 | 22.1 | 16.18R | C10 |
| 0029P | KC2020 | 09 | 15.01909 | 02 | 52 | 21.64 | +27 | 26 | 25.5 | 16.25R | C10 |
| 0029P | KC2020 | 09 | 15.06775 | 02 | 52 | 21.18 | +27 | 26 | 28.6 | 16.18R | C10 |
| 0029P | KC2020 | 09 | 15.11640 | 02 | 52 | 20.69 | +27 | 26 | 31.7 | 16.22R | C10 |
| 0029P | KC2020 | 09 | 15.17761 | 02 | 52 | 20.10 | +27 | 26 | 35.3 | 16.29R | C10 |
| 0029P | KC2020 | 09 | 14.97664 | 02 | 52 | 22.05 | +27 | 26 | 22.7 | 16.44R | Z10 5.5" 6x60s |
| 0029P | KC2020 | 09 | 14.98130 | 02 | 52 | 22.05 | +27 | 26 | 23.2 | 16.41R | Z10 |
| 0029P | KC2020 | 09 | 14.98595 | 02 | 52 | 21.99 | +27 | 26 | 23.7 | 16.43R | Z10 |
| 0029P | C2020 | 09 | 15.32065 | 02 | 52 | 18.84 | +27 | 26 | 43.7 | 16.51R | 718 5.2" |
| 0029P | C2020 | 09 | 15.32217 | 02 | 52 | 18.83 | +27 | 26 | 43.6 | 16.54R | 718 |
| 0029P | C2020 | 09 | 15.32370 | 02 | 52 | 18.81 | +27 | 26 | 43.8 | 16.46R | 718 |
| 0029P | C2020 | 09 | 15.32523 | 02 | 52 | 18.78 | +27 | 26 | 43.9 | 16.53R | 718 |
| 0029P | C2020 | 09 | 15.32676 | 02 | 52 | 18.77 | +27 | 26 | 44.2 | 16.51R | 718 |
| 0029P | C2020 | 09 | 15.32829 | 02 | 52 | 18.76 | +27 | 26 | 44.3 | 16.46R | 718 |
| 0029P | C2020 | 09 | 15.32981 | 02 | 52 | 18.73 | +27 | 26 | 44.3 | 16.53R | 718 |
| 0029P | C2020 | 09 | 15.33134 | 02 | 52 | 18.72 | +27 | 26 | 43.9 | 16.47R | 718 |
| 0029P | C2020 | 09 | 15.33287 | 02 | 52 | 18.70 | +27 | 26 | 44.1 | 16.48R | 718 |
| 0029P | C2020 | 09 | 15.33440 | 02 | 52 | 18.67 | +27 | 26 | 44.6 | 16.55R | 718 |
| 0029P | C2020 | 09 | 15.45088 | 02 | 52 | 17.62 | +27 | 26 | 52.4 | 16.35R | T04 5.7" |

| | | | | | | | | | | | |
|---|--------|----|----------|----|----|-------|-----|----|------|--------|--------------------|
| 0029P | C2020 | 09 | 15.45247 | 02 | 52 | 17.57 | +27 | 26 | 52.7 | 16.35R | T04 |
| 0029P | C2020 | 09 | 15.45401 | 02 | 52 | 17.56 | +27 | 26 | 52.7 | 16.46R | T04 |
| 0029P | C2020 | 09 | 15.45556 | 02 | 52 | 17.54 | +27 | 26 | 52.8 | 16.40R | T04 |
| 0029P | KC2020 | 09 | 15.84308 | 02 | 52 | 13.72 | +27 | 27 | 14.2 | 16.31R | C10 6.5" |
| 0029P | KC2020 | 09 | 15.89085 | 02 | 52 | 13.28 | +27 | 27 | 17.2 | 16.27R | C10 |
| 0029P | KC2020 | 09 | 15.93950 | 02 | 52 | 12.78 | +27 | 27 | 20.1 | 16.27R | C10 |
| 0029P | KC2020 | 09 | 15.98816 | 02 | 52 | 12.29 | +27 | 27 | 23.4 | 16.29R | C10 |
| 0029P | KC2020 | 09 | 16.03681 | 02 | 52 | 11.77 | +27 | 27 | 25.9 | 16.23R | C10 |
| 0029P | KC2020 | 09 | 16.08548 | 02 | 52 | 11.27 | +27 | 27 | 28.8 | 16.24R | C10 |
| 0029P | KC2020 | 09 | 16.13726 | 02 | 52 | 10.73 | +27 | 27 | 32.0 | 16.18R | C10 |
| 0029P | KC2020 | 09 | 16.17869 | 02 | 52 | 10.28 | +27 | 27 | 34.1 | 16.30R | C10 |
| 0029P | KC2020 | 09 | 16.27944 | 02 | 52 | 09.35 | +27 | 27 | 40.1 | 16.46R | 718 5.2" 0.35-m |
| 3x120s | | | | | | | | | | | |
| 0029P | KC2020 | 09 | 16.28479 | 02 | 52 | 09.32 | +27 | 27 | 40.5 | 16.51R | 718 5.2" 0.35-m |
| 4x120s | | | | | | | | | | | |
| 0029P | KC2020 | 09 | 16.29014 | 02 | 52 | 09.26 | +27 | 27 | 40.7 | 16.52R | 718 5.2" 0.35-m |
| 3x120s | | | | | | | | | | | |
| 0029P | C2020 | 09 | 16.45088 | 02 | 52 | 07.64 | +27 | 27 | 50.3 | 16.41R | T04 5.7" galaxy |
| subtracted | | | | | | | | | | | |
| 0029P | C2020 | 09 | 16.45243 | 02 | 52 | 07.58 | +27 | 27 | 50.5 | 16.47R | T04 |
| 0029P | C2020 | 09 | 16.45397 | 02 | 52 | 07.56 | +27 | 27 | 50.6 | 16.45R | T04 |
| 0029P | C2020 | 09 | 16.45552 | 02 | 52 | 07.54 | +27 | 27 | 50.7 | 16.47R | T04 |
| 0029P | KC2020 | 09 | 16.85297 | 02 | 52 | 03.40 | +27 | 28 | 11.0 | 16.30R | C10 6.5" |
| 0029P | KC2020 | 09 | 16.90184 | 02 | 52 | 02.86 | +27 | 28 | 13.8 | 16.35R | C10 |
| 0029P | KC2020 | 09 | 16.95070 | 02 | 52 | 02.30 | +27 | 28 | 17.0 | 16.33R | C10 |
| 0029P | KC2020 | 09 | 16.99953 | 02 | 52 | 01.78 | +27 | 28 | 19.7 | 16.30R | C10 |
| 0029P | KC2020 | 09 | 17.04830 | 02 | 52 | 01.25 | +27 | 28 | 22.3 | 16.29R | C10 |
| 0029P | KC2020 | 09 | 17.09806 | 02 | 52 | 00.69 | +27 | 28 | 25.0 | 16.35R | C10 |
| 0029P | KC2020 | 09 | 17.16017 | 02 | 52 | 00.00 | +27 | 28 | 28.5 | 16.35R | C10 |
| 0029P | KC2020 | 09 | 16.85520 | 02 | 52 | 03.33 | +27 | 28 | 11.3 | 16.48R | J77 5.44" r 30x60s |
| 0029P | KC2020 | 09 | 16.86772 | 02 | 52 | 03.22 | +27 | 28 | 12.3 | 16.50R | J77 10x60s |
| 0029P | C2020 | 09 | 16.95406 | 02 | 52 | 02.31 | +27 | 28 | 17.0 | 16.48R | I81 5.2" |
| 0029P | C2020 | 09 | 16.95549 | 02 | 52 | 02.26 | +27 | 28 | 17.0 | 16.42R | I81 |
| 0029P | C2020 | 09 | 16.95974 | 02 | 52 | 02.22 | +27 | 28 | 17.1 | 16.41R | I81 |
| 0029P | C2020 | 09 | 16.96537 | 02 | 52 | 02.16 | +27 | 28 | 17.6 | 16.39R | I81 |
| 0029P | C2020 | 09 | 16.96678 | 02 | 52 | 02.14 | +27 | 28 | 17.6 | 16.41R | I81 |
| 0029P | KC2020 | 09 | 16.95822 | 02 | 52 | 02.24 | +27 | 28 | 17.4 | 16.42R | 204 5.6" |
| 0029P | KC2020 | 09 | 17.03630 | 02 | 52 | 01.37 | +27 | 28 | 21.7 | 16.42R | 204 |
| 2020-09-16.982627, 67x10s 16.37 +/- 0.059 mag | | | | | | | | | | | |
| 0029P | KC2020 | 09 | 17.28389 | 02 | 51 | 58.72 | +27 | 28 | 35.2 | 16.49R | 718 5.2" 3x120s |
| 0029P | KC2020 | 09 | 17.28924 | 02 | 51 | 58.66 | +27 | 28 | 35.1 | 16.50R | 718 5.2" 4x120s |
| 0029P | KC2020 | 09 | 17.29458 | 02 | 51 | 58.61 | +27 | 28 | 35.9 | 16.51R | 718 5.2" 3x120s |
| 0029P | C2020 | 09 | 17.63632 | 02 | 51 | 54.82 | +27 | 28 | 55.5 | 16.51R | Q58 5.7" 0.4-m |
| 0029P | C2020 | 09 | 17.63789 | 02 | 51 | 54.81 | +27 | 28 | 55.3 | 16.57R | Q58 |
| 0029P | C2020 | 09 | 17.63945 | 02 | 51 | 54.79 | +27 | 28 | 55.4 | 16.21R | Q58 cosmic |
| ray? | | | | | | | | | | | |
| 0029P | C2020 | 09 | 17.64102 | 02 | 51 | 54.76 | +27 | 28 | 55.8 | 16.63R | Q58 |
| 0029P | C2020 | 09 | 17.82513 | 02 | 51 | 52.65 | +27 | 29 | 03.1 | 16.56R | J77 5.44" r 15x60s |
| 0029P | C2020 | 09 | 17.83586 | 02 | 51 | 52.64 | +27 | 29 | 02.8 | 16.42R | J77 5.44" r 15x60s |
| 0029P | KC2020 | 09 | 17.84412 | 02 | 51 | 52.51 | +27 | 29 | 03.3 | 16.30R | C10 6.5" |
| 0029P | KC2020 | 09 | 17.89196 | 02 | 51 | 51.96 | +27 | 29 | 06.0 | 16.37R | C10 |
| 0029P | KC2020 | 09 | 17.94081 | 02 | 51 | 51.40 | +27 | 29 | 08.5 | 16.42R | C10 |
| 0029P | KC2020 | 09 | 17.98952 | 02 | 51 | 50.83 | +27 | 29 | 10.9 | 16.42R | C10 |
| 0029P | KC2020 | 09 | 18.03817 | 02 | 51 | 50.24 | +27 | 29 | 13.4 | 16.39R | C10 |
| 0029P | KC2020 | 09 | 18.08703 | 02 | 51 | 49.64 | +27 | 29 | 15.9 | 16.36R | C10 |
| 0029P | KC2020 | 09 | 18.17085 | 02 | 51 | 48.65 | +27 | 29 | 20.2 | 16.37R | C10 |
| 0029P | C2020 | 09 | 17.91386 | 02 | 51 | 51.68 | +27 | 29 | 06.9 | 16.49R | I81 5.2" |
| 0029P | C2020 | 09 | 17.91458 | 02 | 51 | 51.67 | +27 | 29 | 07.0 | 16.53R | I81 |
| 0029P | C2020 | 09 | 17.91530 | 02 | 51 | 51.69 | +27 | 29 | 07.4 | 16.49R | I81 |
| 0029P | C2020 | 09 | 17.91602 | 02 | 51 | 51.66 | +27 | 29 | 07.0 | 16.57R | I81 |
| 0029P | C2020 | 09 | 17.91674 | 02 | 51 | 51.65 | +27 | 29 | 06.8 | 16.63R | I81 |
| 0029P | C2020 | 09 | 17.91746 | 02 | 51 | 51.64 | +27 | 29 | 07.0 | 16.55R | I81 |
| 0029P | C2020 | 09 | 17.91818 | 02 | 51 | 51.64 | +27 | 29 | 07.0 | 16.58R | I81 |
| 0029P | C2020 | 09 | 17.91890 | 02 | 51 | 51.63 | +27 | 29 | 07.0 | 16.47R | I81 |

| | | | | | | | | | | | |
|-------|--------|----|----------|----|----|-------|-----|----|------|--------|-------------------|
| 0029P | C2020 | 09 | 17.91962 | 02 | 51 | 51.60 | +27 | 29 | 07.5 | 16.58R | I81 |
| 0029P | C2020 | 09 | 17.92034 | 02 | 51 | 51.61 | +27 | 29 | 07.2 | 16.51R | I81 |
| 0029P | KC2020 | 09 | 17.98101 | 02 | 51 | 50.94 | +27 | 29 | 10.7 | 16.53R | J77 5.44" r 5x60s |
| 0029P | KC2020 | 09 | 17.98566 | 02 | 51 | 50.84 | +27 | 29 | 10.9 | 16.55R | J77 |
| 0029P | KC2020 | 09 | 17.98961 | 02 | 51 | 50.80 | +27 | 29 | 11.2 | 16.61R | J77 |
| 0029P | KC2020 | 09 | 17.99426 | 02 | 51 | 50.76 | +27 | 29 | 11.4 | 16.55R | J77 |
| 0029P | KC2020 | 09 | 18.24134 | 02 | 51 | 47.91 | +27 | 29 | 23.9 | 16.52R | 718 5.2" |
| 0029P | KC2020 | 09 | 18.24670 | 02 | 51 | 47.86 | +27 | 29 | 24.2 | 16.47R | 718 |
| 0029P | KC2020 | 09 | 18.25205 | 02 | 51 | 47.77 | +27 | 29 | 23.9 | 16.55R | 718 |
| 0029P | C2020 | 09 | 18.47038 | 02 | 51 | 45.13 | +27 | 29 | 35.1 | 16.69R | V38 5.7" |
| 0029P | C2020 | 09 | 18.47187 | 02 | 51 | 45.13 | +27 | 29 | 35.6 | 17.11R | V38 ? |
| 0029P | C2020 | 09 | 18.47335 | 02 | 51 | 45.12 | +27 | 29 | 35.1 | 16.88R | V38 |
| 0029P | C2020 | 09 | 18.70078 | 02 | 51 | 42.38 | +27 | 29 | 49.2 | 16.53R | E94 6.15" RM |
| 0029P | C2020 | 09 | 18.70509 | 02 | 51 | 42.39 | +27 | 29 | 49.0 | 16.54R | E94 |

2020-09-18.933137, 150x10s 16.46 +/- 0.053 mag

| | | | | | | | | | | | |
|-------|--------|----|----------|----|----|-------|-----|----|------|--------|--------------------|
| 0029P | KC2020 | 09 | 18.94502 | | | | | | | 16.51R | 970 5.8" |
| 0029P | KC2020 | 09 | 18.99466 | | | | | | | 16.43R | 970 |
| 0029P | KC2020 | 09 | 19.02653 | | | | | | | 16.62R | 970 |
| 0029P | KC2020 | 09 | 19.04758 | | | | | | | 16.54R | 970 |
| 0029P | KC2020 | 09 | 19.07726 | | | | | | | 16.44R | 970 |
| 0029P | KC2020 | 09 | 19.07726 | 02 | 51 | 37.91 | +27 | 30 | 03.5 | 16.46R | 970 5.16" RM |
| 0029P | KC2020 | 09 | 19.10674 | | | | | | | 16.65R | 970 |
| 0029P | KC2020 | 09 | 19.11058 | | | | | | | 16.55R | 970 |
| 0029P | KC2020 | 09 | 19.04915 | 02 | 51 | 38.28 | +27 | 30 | 02.3 | 16.56R | B96 5.0" Clear |
| 0029P | KC2020 | 09 | 19.06064 | 02 | 51 | 38.16 | +27 | 30 | 02.8 | 16.60R | B96 5.0" R filter |
| 0029P | dC2020 | 09 | 19.36939 | 02 | 51 | 34.37 | +27 | 30 | 17.3 | 16.55R | C. S. Morris 4.84" |
| 0029P | dC2020 | 09 | 19.37297 | 02 | 51 | 34.33 | +27 | 30 | 17.4 | 16.50R | C. S. Morris 4.84" |
| 0029P | dC2020 | 09 | 19.37604 | 02 | 51 | 34.29 | +27 | 30 | 17.5 | 16.54R | C. S. Morris 4.84" |
| 0029P | C2020 | 09 | 19.45098 | 02 | 51 | 33.38 | +27 | 30 | 21.1 | 16.61R | T03 5.7" |
| 0029P | C2020 | 09 | 19.45254 | 02 | 51 | 33.37 | +27 | 30 | 21.4 | 16.69R | T03 |
| 0029P | C2020 | 09 | 19.45408 | 02 | 51 | 33.33 | +27 | 30 | 21.2 | 16.68R | T03 |
| 0029P | C2020 | 09 | 19.45567 | 02 | 51 | 33.29 | +27 | 30 | 21.5 | 16.68R | T03 |

**mini-outburst at 2020 09 19.70 +/-0.20 16.60R => 16.30R

| | | | | | | | | | | | |
|-------|--------|----|----------|----|----|-------|-----|----|------|--------|--------------------|
| 0029P | KC2020 | 09 | 19.95151 | | | | | | | 16.28R | 970 5.8" |
| 0029P | KC2020 | 09 | 20.00409 | | | | | | | 16.24R | 970 |
| 0029P | KC2020 | 09 | 20.05348 | | | | | | | 16.23R | 970 |
| 0029P | KC2020 | 09 | 20.09425 | | | | | | | 16.32R | 970 |
| 0029P | KC2020 | 09 | 20.13476 | | | | | | | 16.37R | 970 |
| 0029P | C2020 | 09 | 19.96966 | 02 | 51 | 26.81 | +27 | 30 | 42.6 | 16.24R | I81 5.2" |
| 0029P | C2020 | 09 | 19.97109 | 02 | 51 | 26.79 | +27 | 30 | 42.8 | 16.18R | I81 |
| 0029P | C2020 | 09 | 19.97251 | 02 | 51 | 26.78 | +27 | 30 | 43.0 | 16.20R | I81 |
| 0029P | C2020 | 09 | 19.97392 | 02 | 51 | 26.76 | +27 | 30 | 43.0 | 16.24R | I81 |
| 0029P | C2020 | 09 | 19.97533 | 02 | 51 | 26.74 | +27 | 30 | 43.1 | 16.23R | I81 |
| 0029P | C2020 | 09 | 19.97674 | 02 | 51 | 26.72 | +27 | 30 | 43.1 | 16.22R | I81 |
| 0029P | C2020 | 09 | 19.97814 | 02 | 51 | 26.70 | +27 | 30 | 43.2 | 16.25R | I81 |
| 0029P | C2020 | 09 | 19.97955 | 02 | 51 | 26.69 | +27 | 30 | 43.3 | 16.23R | I81 |
| 0029P | C2020 | 09 | 19.98098 | 02 | 51 | 26.67 | +27 | 30 | 43.4 | 16.25R | I81 |
| 0029P | C2020 | 09 | 19.98240 | 02 | 51 | 26.64 | +27 | 30 | 43.3 | 16.22R | I81 |
| 0029P | C2020 | 09 | 20.18497 | 02 | 51 | 23.97 | +27 | 30 | 52.0 | 16.18R | I81 |
| 0029P | C2020 | 09 | 20.18639 | 02 | 51 | 23.96 | +27 | 30 | 52.1 | 16.22R | I81 |
| 0029P | C2020 | 09 | 20.18782 | 02 | 51 | 23.93 | +27 | 30 | 52.1 | 16.35R | I81 |
| 0029P | C2020 | 09 | 20.18922 | 02 | 51 | 23.92 | +27 | 30 | 52.1 | 16.17R | I81 |
| 0029P | C2020 | 09 | 20.19063 | 02 | 51 | 23.89 | +27 | 30 | 52.3 | 16.27R | I81 |
| 0029P | KC2020 | 09 | 20.26174 | 02 | 51 | 23.09 | +27 | 30 | 55.5 | 16.33R | 718 5.2" |
| 0029P | KC2020 | 09 | 20.26708 | 02 | 51 | 23.03 | +27 | 30 | 55.9 | 16.28R | 718 |
| 0029P | KC2020 | 09 | 20.27243 | 02 | 51 | 22.92 | +27 | 30 | 56.5 | 16.32R | 718 |
| 0029P | dC2020 | 09 | 20.28669 | 02 | 51 | 22.77 | +27 | 30 | 56.7 | 16.34R | C. S. Morris 4.84" |
| 0029P | dC2020 | 09 | 20.29197 | 02 | 51 | 22.67 | +27 | 30 | 57.0 | 16.36R | C. S. Morris 4.84" |
| 0029P | dC2020 | 09 | 20.29758 | 02 | 51 | 22.58 | +27 | 30 | 57.6 | 16.40R | C. S. Morris 4.84" |
| 0029P | dC2020 | 09 | 20.30063 | 02 | 51 | 22.61 | +27 | 30 | 57.1 | 16.39R | C. S. Morris 4.84" |
| 0029P | dC2020 | 09 | 20.38818 | 02 | 51 | 21.39 | +27 | 31 | 01.1 | 16.33R | C. S. Morris 4.84" |
| 0029P | dC2020 | 09 | 20.39600 | 02 | 51 | 21.27 | +27 | 31 | 01.5 | 16.37R | C. S. Morris 4.84" |

| | | | | | | | | | | | |
|----------|--------|----|----------|----|----|-------|-----|----|------|--------|---------------------|
| 0029P | dC2020 | 09 | 20.39942 | 02 | 51 | 21.23 | +27 | 31 | 01.6 | 16.39R | C. S. Morris 4.84" |
| 0029P | dC2020 | 09 | 20.46203 | 02 | 51 | 20.37 | +27 | 31 | 04.3 | 16.35R | C. S. Morris 4.84" |
| 0029P | dC2020 | 09 | 20.46475 | 02 | 51 | 20.36 | +27 | 31 | 04.4 | 16.36R | C. S. Morris 4.84" |
| 0029P | dC2020 | 09 | 20.46767 | 02 | 51 | 20.29 | +27 | 31 | 04.4 | 16.32R | C. S. Morris 4.84" |
| 0029P | dC2020 | 09 | 20.47132 | 02 | 51 | 20.22 | +27 | 31 | 04.5 | 16.36R | C. S. Morris 4.84" |
| 0029P | KC2020 | 09 | 20.29305 | 02 | 51 | 22.61 | +27 | 30 | 58.5 | 16.48R | W96 5.0" |
| 0029P | KC2020 | 09 | 20.35420 | 02 | 51 | 21.74 | +27 | 31 | 01.3 | 16.43R | W96 |
| 0029P | KC2020 | 09 | 20.39182 | 02 | 51 | 21.23 | +27 | 31 | 02.7 | 16.42R | W96 |
| 0029P | KC2020 | 09 | 20.29479 | 02 | 51 | 22.59 | +27 | 30 | 58.7 | 16.31R | W96 5.9" |
| 0029P | KC2020 | 09 | 20.35594 | 02 | 51 | 21.75 | +27 | 31 | 01.6 | 16.30R | W96 |
| 0029P | KC2020 | 09 | 20.39355 | 02 | 51 | 21.22 | +27 | 31 | 02.9 | 16.21R | W96 |
| 0029P | KC2020 | 09 | 20.82581 | 02 | 51 | 15.63 | +27 | 31 | 17.3 | 16.14R | C10 ? |
| 0029P | KC2020 | 09 | 20.87456 | 02 | 51 | 14.99 | +27 | 31 | 19.7 | 16.20R | C10 6.5" |
| 0029P | KC2020 | 09 | 20.92335 | 02 | 51 | 14.33 | +27 | 31 | 21.6 | 16.19R | C10 |
| 0029P | KC2020 | 09 | 20.97261 | 02 | 51 | 13.62 | +27 | 31 | 23.9 | 16.23R | C10 |
| 0029P | KC2020 | 09 | 21.02133 | 02 | 51 | 12.95 | +27 | 31 | 25.8 | 16.22R | C10 |
| 0029P | KC2020 | 09 | 21.07040 | 02 | 51 | 12.27 | +27 | 31 | 27.6 | 16.21R | C10 |
| 0029P | KC2020 | 09 | 21.12446 | 02 | 51 | 11.51 | +27 | 31 | 29.6 | 16.26R | C10 |
| 0029P | KC2020 | 09 | 21.18190 | 02 | 51 | 10.71 | +27 | 31 | 32.0 | 16.23R | C10 |
| 0029P | KC2020 | 09 | 20.83735 | 02 | 51 | 15.45 | +27 | 31 | 17.9 | 16.35R | J77 5.44" r 10x60s |
| 0029P | KC2020 | 09 | 20.86123 | 02 | 51 | 15.11 | +27 | 31 | 19.3 | 16.34R | J77 |
| 0029P | KC2020 | 09 | 20.86839 | 02 | 51 | 15.06 | +27 | 31 | 19.1 | 16.35R | J77 |
| 0029P | KC2020 | 09 | 20.87554 | 02 | 51 | 14.97 | +27 | 31 | 19.7 | 16.28R | J77 |
| 0029P | KC2020 | 09 | 20.99106 | 02 | 51 | 13.37 | +27 | 31 | 24.6 | 16.35R | J77 |
| 0029P | KC2020 | 09 | 20.99822 | 02 | 51 | 13.29 | +27 | 31 | 24.8 | 16.34R | J77 |
| 0029P | KC2020 | 09 | 21.00538 | 02 | 51 | 13.20 | +27 | 31 | 25.2 | 16.31R | J77 |
| 0029P | KC2020 | 09 | 20.85973 | | | | | | | 16.37R | 970 5.8" |
| 0029P | KC2020 | 09 | 20.92445 | | | | | | | 16.36R | 970 |
| 0029P | KC2020 | 09 | 21.00820 | | | | | | | 16.33R | 970 |
| 0029P | KC2020 | 09 | 21.05752 | | | | | | | 16.29R | 970 |
| 0029P | KC2020 | 09 | 21.09823 | | | | | | | 16.30R | 970 |
| 0029P | C2020 | 09 | 21.29093 | 02 | 51 | 09.32 | +27 | 31 | 36.3 | 16.57R | V38 |
| 0029P | C2020 | 09 | 21.29242 | 02 | 51 | 09.29 | +27 | 31 | 36.3 | 16.51R | V38 |
| 0029P | KC2020 | 09 | 21.29317 | 02 | 51 | 09.29 | +27 | 31 | 36.3 | 16.62R | V38 ? offset by 0.3 |
| mag ? | | | | | | | | | | | |
| 0029P | C2020 | 09 | 21.29391 | 02 | 51 | 09.28 | +27 | 31 | 36.3 | 16.65R | V38 |
| 0029P | C2020 | 09 | 21.29540 | 02 | 51 | 09.26 | +27 | 31 | 36.3 | 16.74R | V38 |
| 0029P | KC2020 | 09 | 21.29774 | 02 | 51 | 09.22 | +27 | 31 | 36.4 | 16.33R | 718 5.2" |
| 0029P | KC2020 | 09 | 21.30309 | 02 | 51 | 09.15 | +27 | 31 | 36.5 | 16.36R | 718 |
| 0029P | KC2020 | 09 | 21.30844 | 02 | 51 | 09.07 | +27 | 31 | 37.0 | 16.35R | 718 |
| 0029P | C2020 | 09 | 21.56869 | 02 | 51 | 05.39 | +27 | 31 | 47.2 | 16.23R | E94 6.06" 0.35-m RM |
| measured | | | | | | | | | | | |
| 0029P | C2020 | 09 | 21.56869 | 02 | 51 | 05.39 | +27 | 31 | 47.3 | 16.36R | E94 5.05" 0.35-m RM |
| measured | | | | | | | | | | | |
| 0029P | C2020 | 09 | 21.63130 | 02 | 51 | 04.53 | +27 | 31 | 52.0 | 16.31R | E94 6.06" 0.35-m RM |
| measured | | | | | | | | | | | |
| 0029P | C2020 | 09 | 21.63130 | 02 | 51 | 04.13 | +27 | 31 | 49.7 | 16.50R | E94 5.05" 0.35-m RM |
| measured | | | | | | | | | | | |
| 0029P | KC2020 | 09 | 21.84964 | 02 | 51 | 01.58 | +27 | 31 | 56.3 | 16.31R | C10 6.5" |
| 0029P | KC2020 | 09 | 21.89831 | 02 | 51 | 00.89 | +27 | 31 | 57.6 | 16.27R | C10 |
| 0029P | KC2020 | 09 | 21.94701 | 02 | 51 | 00.17 | +27 | 31 | 59.6 | 16.23R | C10 |
| 0029P | KC2020 | 09 | 21.99575 | 02 | 50 | 59.46 | +27 | 32 | 01.3 | 16.30R | C10 |
| 0029P | KC2020 | 09 | 22.04437 | 02 | 50 | 58.75 | +27 | 32 | 03.0 | 16.17R | C10 |
| 0029P | KC2020 | 09 | 22.09308 | 02 | 50 | 58.05 | +27 | 32 | 04.7 | 16.14R | C10 |
| 0029P | KC2020 | 09 | 22.14705 | 02 | 50 | 57.25 | +27 | 32 | 06.6 | 16.15R | C10 |
| 0029P | KC2020 | 09 | 22.18129 | 02 | 50 | 56.74 | +27 | 32 | 07.8 | 16.12R | C10 |
| 0029P | KC2020 | 09 | 21.91386 | | | | | | | 16.48R | 970 5.8" |
| 0029P | KC2020 | 09 | 21.92152 | | | | | | | 16.41R | 970 |
| 0029P | KC2020 | 09 | 21.96153 | | | | | | | 16.28R | 970 |
| 0029P | KC2020 | 09 | 21.99235 | | | | | | | 16.29R | 970 |
| 0029P | KC2020 | 09 | 22.03267 | | | | | | | 16.29R | 970 |
| 0029P | KC2020 | 09 | 22.08940 | | | | | | | 16.29R | 970 |
| 0029P | KC2020 | 09 | 21.93447 | 02 | 51 | 00.36 | +27 | 31 | 59.0 | 16.34R | J77 5.44" r 10x60s |
| 0029P | KC2020 | 09 | 21.94162 | 02 | 51 | 00.23 | +27 | 31 | 59.1 | 16.36R | J77 |
| 0029P | KC2020 | 09 | 21.94878 | 02 | 51 | 00.14 | +27 | 31 | 59.5 | 16.33R | J77 |
| 0029P | KC2020 | 09 | 21.95558 | 02 | 51 | 00.05 | +27 | 31 | 59.7 | 16.38R | J77 |
| 0029P | KC2020 | 09 | 21.96310 | 02 | 50 | 59.94 | +27 | 32 | 00.1 | 16.38R | J77 |

| | | | |
|-------|--|--------|--------------------|
| 0029P | KC2020 09 21.97025 02 50 59.83 +27 32 00.3 | 16.34R | J77 |
| 0029P | C2020 09 22.21964 02 50 56.32 +27 32 08.8 | 16.65R | V38 ? strange |
| 0029P | offset from V38 | | |
| 0029P | C2020 09 22.22113 02 50 56.29 +27 32 09.1 | 16.69R | V38 |
| 0029P | KC2020 09 22.22186 02 50 56.28 +27 32 09.1 | 16.69R | V38 5.7" 4x120s |
| 0029P | C2020 09 22.22261 02 50 56.27 +27 32 09.1 | 16.60R | V38 |
| 0029P | C2020 09 22.22410 02 50 56.26 +27 32 08.9 | 16.67R | V38 |
| 0029P | KC2020 09 22.27934 02 50 55.46 +27 32 12.3 | 16.42R | 718 5.2" star |
| 0029P | contamination? | | |
| 0029P | C2020 09 22.70219 02 50 49.15 +27 32 29.5 | 16.27R | E94 6.15" 0.41-m |
| 0029P | poor sky, part obscured | | |
| 0029P | KC2020 09 22.99218 | 16.39R | 970 5.8" |
| 0029P | C2020 09 23.25459 02 50 41.10 +27 32 41.7 | 16.69R | V38 ? |
| 0029P | C2020 09 23.25608 02 50 41.09 +27 32 41.9 | 16.39R | V38 |
| 0029P | KC2020 09 23.25682 02 50 41.08 +27 32 41.7 | 16.53R | V38 5.7" 4x120s r |
| 0029P | C2020 09 23.25756 02 50 41.10 +27 32 41.5 | 16.54R | V38 |
| 0029P | C2020 09 23.25905 02 50 41.06 +27 32 41.5 | 16.42R | V38 |
| 0029P | KC2020 09 23.85610 02 50 31.97 +27 32 58.6 | 16.26N | L27 6.6" |
| 0029P | KC2020 09 23.87470 02 50 31.69 +27 32 59.0 | 16.13N | L27 |
| 0029P | KC2020 09 23.89458 02 50 31.39 +27 32 59.4 | 16.17N | L27 |
| 0029P | KC2020 09 23.92774 02 50 30.85 +27 33 00.2 | 16.26N | L27 |
| 0029P | KC2020 09 23.94383 02 50 30.60 +27 33 01.0 | 16.41R | J77 5.44" Clear |
| 0029P | 7x60s | | |
| 0029P | KC2020 09 23.94884 02 50 30.50 +27 33 01.0 | 16.36R | J77 |
| 0029P | KC2020 09 23.95448 02 50 30.41 +27 33 01.1 | 16.42R | J77 |
| 0029P | KC2020 09 23.95965 02 50 30.32 +27 33 01.2 | 16.47R | J77 frost affected |
| 0029P | KC2020 09 23.96486 02 50 30.24 +27 33 01.4 | 16.53R | J77 frost affected |
| 0029P | C2020 09 23.94592 02 50 30.53 +27 33 00.6 | 16.40R | I81 5.2" |
| 0029P | C2020 09 23.94733 02 50 30.50 +27 33 00.7 | 16.36R | I81 |
| 0029P | C2020 09 23.99462 02 50 29.75 +27 33 02.0 | 16.40R | I81 |
| 0029P | C2020 09 23.99602 02 50 29.75 +27 33 02.3 | 16.38R | I81 |
| 0029P | C2020 09 23.99743 02 50 29.73 +27 33 02.1 | 16.37R | I81 |
| 0029P | C2020 09 23.99884 02 50 29.69 +27 33 02.4 | 16.28R | I81 |
| 0029P | C2020 09 24.00027 02 50 29.67 +27 33 02.3 | 16.38R | I81 |
| 0029P | C2020 09 24.00169 02 50 29.66 +27 33 02.4 | 16.38R | I81 |
| 0029P | C2020 09 24.00312 02 50 29.63 +27 33 02.3 | 16.35R | I81 |
| 0029P | C2020 09 24.00454 02 50 29.60 +27 33 02.3 | 16.35R | I81 |
| 0029P | C2020 09 24.00597 02 50 29.59 +27 33 02.4 | 16.36R | I81 |
| 0029P | C2020 09 24.00739 02 50 29.57 +27 33 02.4 | 16.36R | I81 |
| 0029P | C2020 09 24.04294 02 50 28.98 +27 33 05.9 | 16.43R | K93 5.5" 1.0-m |
| 0029P | dC2020 09 24.28583 02 50 25.30 +27 33 10.6 | 16.48R | C. S. Morris 4.84" |
| 0029P | dC2020 09 24.29045 02 50 25.20 +27 33 10.6 | 16.52R | C. S. Morris 4.84" |
| 0029P | dC2020 09 24.29425 02 50 25.12 +27 33 10.0 | 16.41R | C. S. Morris 4.84" |
| 0029P | KC2020 09 24.34429 02 50 24.29 +27 33 12.0 | 16.72R | V38 ? 3x120s |
| 0029P | transparency changing | | |
| 0029P | C2020 09 25.02900 02 50 13.34 +27 33 29.8 | 16.67R | L09 |
| 0029P | C2020 09 25.03049 02 50 13.33 +27 33 29.5 | 16.64R | L09 |
| 0029P | KC2020 09 25.03124 02 50 13.32 +27 33 29.9 | 16.61R | L09 5.7" 4x120s r |
| 0029P | C2020 09 25.03198 02 50 13.29 +27 33 29.8 | 16.59R | L09 |
| 0029P | C2020 09 25.03347 02 50 13.25 +27 33 29.9 | 16.55R | L09 |
| 0029P | C2020 09 25.04599 02 50 13.07 +27 33 30.4 | 16.60R | K92 5.5" 1.0-m r |
| 0029P | C2020 09 25.05203 02 50 13.05 +27 33 28.7 | 16.40R | 213 5.4" Clear |
| 0029P | difficult starfield | | |
| 0029P | C2020 09 25.06069 02 50 12.85 +27 33 28.8 | 16.39R | 213 |
| 0029P | C2020 09 25.06942 02 50 12.69 +27 33 29.1 | 16.39R | 213 |
| 0029P | C2020 09 25.07808 02 50 12.54 +27 33 29.8 | 16.41R | 213 |
| 0029P | C2020 09 25.08681 02 50 12.44 +27 33 29.6 | 16.32R | 213 |
| 0029P | C2020 09 25.09738 02 50 12.25 +27 33 30.1 | 16.40R | 213 |
| 0029P | C2020 09 25.10605 02 50 12.11 +27 33 30.4 | 16.44R | 213 |
| 0029P | KC2020 09 25.26098 02 50 09.66 +27 33 33.1 | 16.46R | 718 5.2" |
| 0029P | KC2020 09 25.26633 02 50 09.56 +27 33 33.1 | 16.44R | 718 |
| 0029P | KC2020 09 25.27168 02 50 09.47 +27 33 33.5 | 16.52R | 718 |

| | | | | | | | | | | | |
|-------------------|--------|----|----------|----|----|-------|-----|----|------|--------|--------------------|
| 0029P | dC2020 | 09 | 25.27500 | 02 | 50 | 09.42 | +27 | 33 | 33.4 | 16.50R | C. S. Morris 4.84" |
| 0029P | dC2020 | 09 | 25.27863 | 02 | 50 | 09.37 | +27 | 33 | 33.5 | 16.49R | C. S. Morris 4.84" |
| 0029P | dC2020 | 09 | 25.28759 | 02 | 50 | 09.22 | +27 | 33 | 33.7 | 16.49R | C. S. Morris 4.84" |
| 0029P | KC2020 | 09 | 25.9611 | | | | | | | 16.45 | Z80 6.0" +/-0.07 |
| mag 281x3s, windy | | | | | | | | | | | |
| 0029P | C2020 | 09 | 25.98008 | 02 | 49 | 57.70 | +27 | 33 | 47.0 | 16.46R | I81 5.2" |
| 0029P | C2020 | 09 | 25.98150 | 02 | 49 | 57.69 | +27 | 33 | 46.3 | 16.51R | I81 |
| 0029P | C2020 | 09 | 25.98292 | 02 | 49 | 57.61 | +27 | 33 | 47.5 | 16.46R | I81 |
| 0029P | C2020 | 09 | 25.98435 | 02 | 49 | 57.61 | +27 | 33 | 47.2 | 16.46R | I81 |
| 0029P | C2020 | 09 | 25.98577 | 02 | 49 | 57.58 | +27 | 33 | 47.2 | 16.49R | I81 |
| 0029P | C2020 | 09 | 25.98720 | 02 | 49 | 57.59 | +27 | 33 | 47.4 | 16.46R | I81 |
| 0029P | C2020 | 09 | 25.98862 | 02 | 49 | 57.58 | +27 | 33 | 47.4 | 16.48R | I81 |
| 0029P | C2020 | 09 | 25.99005 | 02 | 49 | 57.53 | +27 | 33 | 47.0 | 16.50R | I81 |
| 0029P | C2020 | 09 | 25.99147 | 02 | 49 | 57.53 | +27 | 33 | 47.2 | 16.45R | I81 |
| 0029P | C2020 | 09 | 25.99290 | 02 | 49 | 57.45 | +27 | 33 | 47.1 | 16.53R | I81 |
| 0029P | KC2020 | 09 | 25.99106 | 02 | 49 | 57.51 | +27 | 33 | 47.8 | 16.53R | Z10 5.5" 6x60s |
| 0029P | KC2020 | 09 | 25.99571 | 02 | 49 | 57.45 | +27 | 33 | 47.8 | 16.52R | Z10 |
| 0029P | KC2020 | 09 | 26.00036 | 02 | 49 | 57.36 | +27 | 33 | 48.2 | 16.53R | Z10 |
| 0029P | KC2020 | 09 | 26.13619 | 02 | 49 | 55.05 | +27 | 33 | 50.2 | 16.53R | J77 5.44" r 10x60s |
| 0029P | KC2020 | 09 | 26.14334 | 02 | 49 | 54.94 | +27 | 33 | 50.7 | 16.54R | J77 |
| 0029P | KC2020 | 09 | 26.15051 | 02 | 49 | 54.81 | +27 | 33 | 50.5 | 16.50R | J77 |
| 0029P | KC2020 | 09 | 26.15419 | 02 | 49 | 54.72 | +27 | 33 | 50.7 | 16.50R | J77 |
| 0029P | C2020 | 09 | 26.89568 | 02 | 49 | 42.05 | +27 | 34 | 02.0 | 16.56R | I81 5.2" |
| 0029P | C2020 | 09 | 26.89711 | 02 | 49 | 42.01 | +27 | 34 | 02.6 | 16.61R | I81 |
| 0029P | C2020 | 09 | 26.89853 | 02 | 49 | 42.04 | +27 | 34 | 02.5 | 16.63R | I81 |
| 0029P | C2020 | 09 | 26.89996 | 02 | 49 | 41.98 | +27 | 34 | 02.7 | 16.78R | I81 |
| 0029P | C2020 | 09 | 26.90138 | 02 | 49 | 41.93 | +27 | 34 | 02.3 | 16.69R | I81 |
| 0029P | C2020 | 09 | 26.90281 | 02 | 49 | 41.93 | +27 | 34 | 02.2 | 16.66R | I81 |
| 0029P | C2020 | 09 | 26.90423 | 02 | 49 | 41.88 | +27 | 34 | 02.3 | 16.66R | I81 |
| 0029P | C2020 | 09 | 26.90565 | 02 | 49 | 41.85 | +27 | 34 | 02.5 | 16.58R | I81 |
| 0029P | C2020 | 09 | 26.90708 | 02 | 49 | 41.92 | +27 | 34 | 02.1 | 16.71R | I81 |
| 0029P | C2020 | 09 | 26.90850 | 02 | 49 | 41.85 | +27 | 34 | 02.0 | 16.79R | I81 |
| 0029P | KC2020 | 09 | 26.94867 | 02 | 49 | 41.19 | +27 | 34 | 03.7 | 16.66R | J77 5.44" r 10x60s |
| 0029P | KC2020 | 09 | 26.95582 | 02 | 49 | 41.11 | +27 | 34 | 03.8 | 16.62R | J77 |
| 0029P | KC2020 | 09 | 26.97337 | 02 | 49 | 40.75 | +27 | 34 | 04.3 | 16.50R | Z17 5.7" 0.4-m r |
| 4x120s +/-0.06 | | | | | | | | | | | |
| 0029P | KC2020 | 09 | 27.09873 | 02 | 49 | 38.44 | +27 | 34 | 05.9 | 16.53R | 204 5.6" |
| 0029P | KC2020 | 09 | 27.12753 | 02 | 49 | 37.95 | +27 | 34 | 06.1 | 16.50R | Z30 0.35-m Rc |
| 0029P | KC2020 | 09 | 27.20079 | 02 | 49 | 36.73 | +27 | 34 | 07.3 | 16.52R | 718 5.2" |
| 0029P | KC2020 | 09 | 27.20613 | 02 | 49 | 36.66 | +27 | 34 | 07.3 | 16.52R | 718 |
| 0029P | KC2020 | 09 | 27.21148 | 02 | 49 | 36.58 | +27 | 34 | 06.9 | 16.60R | 718 |
| 0029P | KC2020 | 09 | 27.33807 | 02 | 49 | 34.20 | +27 | 34 | 11.0 | 16.53R | W96 5.9" Clear |
| 0029P | KC2020 | 09 | 27.36035 | 02 | 49 | 33.82 | +27 | 34 | 11.4 | 16.55R | W96 |
| 0029P | KC2020 | 09 | 27.38436 | 02 | 49 | 33.33 | +27 | 34 | 11.7 | 16.56R | W96 |
| 0029P | C2020 | 09 | 27.61587 | 02 | 49 | 29.37 | +27 | 34 | 14.8 | 16.59R | Q63 5.5" 1.0-m r |
| +/-0.03 | | | | | | | | | | | |
| 0029P | KC2020 | 09 | 27.90006 | 02 | 49 | 24.30 | +27 | 34 | 15.7 | 16.55R | 204 5.6" |
| 0029P | KC2020 | 09 | 27.90838 | 02 | 49 | 24.14 | +27 | 34 | 15.3 | 16.66R | J77 5.44" r 10x60s |
| 0029P | KC2020 | 09 | 27.91625 | 02 | 49 | 24.02 | +27 | 34 | 16.1 | 16.59R | J77 |
| 0029P | KC2020 | 09 | 27.92440 | 02 | 49 | 23.85 | +27 | 34 | 15.7 | 16.58R | J77 |
| 0029P | KC2020 | 09 | 27.93084 | 02 | 49 | 23.73 | +27 | 34 | 15.9 | 16.65R | J77 |
| 0029P | C2020 | 09 | 27.96167 | 02 | 49 | 23.22 | +27 | 34 | 16.8 | 16.59R | Z21 5.7" |
| 0029P | C2020 | 09 | 28.14256 | 02 | 49 | 19.84 | +27 | 34 | 18.5 | 16.58R | Z10 5.5" 6x60s |
| 0029P | C2020 | 09 | 28.14722 | 02 | 49 | 19.72 | +27 | 34 | 18.8 | 16.64R | Z10 |
| 0029P | C2020 | 09 | 28.15189 | 02 | 49 | 19.65 | +27 | 34 | 18.8 | 16.58R | Z10 |
| 0029P | KC2020 | 09 | 28.22888 | 02 | 49 | 18.33 | +27 | 34 | 18.8 | 16.68R | 718 5.2" |
| 0029P | KC2020 | 09 | 28.23422 | 02 | 49 | 18.24 | +27 | 34 | 19.3 | 16.60R | 718 |
| 0029P | KC2020 | 09 | 28.23957 | 02 | 49 | 18.16 | +27 | 34 | 19.3 | 16.51R | 718 |

| | | | | | | | | | | | |
|---|--------|----|----------|----|----|-------|-----|----|------|--------|---------------------|
| 0029P | KC2020 | 09 | 28.83740 | 02 | 49 | 07.14 | +27 | 34 | 23.5 | 16.37N | L27 6.6" bad seeing |
| 0029P | KC2020 | 09 | 28.87897 | 02 | 49 | 06.38 | +27 | 34 | 24.6 | 16.45N | L27 |
| 0029P | KC2020 | 09 | 28.92244 | 02 | 49 | 05.57 | +27 | 34 | 24.8 | 16.47N | L27 |
| 0029P | C2020 | 09 | 28.98289 | 02 | 49 | 04.41 | +27 | 34 | 27.3 | 16.60R | K92 |
| 0029P | C2020 | 09 | 28.98289 | 02 | 49 | 04.41 | +27 | 34 | 27.3 | 16.64R | K92 |
| 0029P | KC2020 | 09 | 29.21922 | 02 | 48 | 59.99 | +27 | 34 | 26.5 | 16.38R | 718 5.2" 3x120s ? |
| 0029P | KC2020 | 09 | 29.22457 | 02 | 48 | 59.92 | +27 | 34 | 27.0 | 16.50R | 718 5.2" 4x120s |
| 0029P | KC2020 | 09 | 29.22993 | 02 | 48 | 59.86 | +27 | 34 | 26.2 | 16.47R | 718 5.2" 3x120s |
| 0029P | C2020 | 09 | 29.21771 | 02 | 49 | 00.08 | +27 | 34 | 26.4 | 16.42R | 718 |
| 0029P | C2020 | 09 | 29.21922 | 02 | 49 | 00.01 | +27 | 34 | 26.4 | 16.37R | 718 |
| 0029P | C2020 | 09 | 29.22076 | 02 | 49 | 00.00 | +27 | 34 | 26.6 | 16.31R | 718 ? |
| 0029P | C2020 | 09 | 29.22228 | 02 | 48 | 59.97 | +27 | 34 | 26.5 | 16.45R | 718 |
| 0029P | C2020 | 09 | 29.22381 | 02 | 48 | 59.94 | +27 | 34 | 26.7 | 16.53R | 718 |
| 0029P | C2020 | 09 | 29.22534 | 02 | 48 | 59.93 | +27 | 34 | 26.2 | 16.47R | 718 |
| 0029P | C2020 | 09 | 29.22687 | 02 | 48 | 59.88 | +27 | 34 | 26.5 | 16.47R | 718 |
| 0029P | C2020 | 09 | 29.22840 | 02 | 48 | 59.84 | +27 | 34 | 26.5 | 16.55R | 718 |
| 0029P | C2020 | 09 | 29.22993 | 02 | 48 | 59.84 | +27 | 34 | 27.3 | 16.44R | 718 |
| 0029P | C2020 | 09 | 29.23145 | 02 | 48 | 59.81 | +27 | 34 | 26.5 | 16.42R | 718 |
| 0029P | KC2020 | 09 | 30.24288 | 02 | 48 | 40.48 | +27 | 34 | 29.8 | 16.61R | 718 5.2" 3x120s |
| 0029P | KC2020 | 09 | 30.24822 | 02 | 48 | 40.34 | +27 | 34 | 29.9 | 16.70R | 718 |
| 0029P | KC2020 | 09 | 30.25356 | 02 | 48 | 40.25 | +27 | 34 | 29.9 | 16.58R | 718 |
| 0029P | C2020 | 09 | 30.31958 | 02 | 48 | 38.91 | +27 | 34 | 30.7 | 16.60R | V37 5.5" 1.0-m r |
| 0029P | C2020 | 09 | 30.32058 | 02 | 48 | 38.88 | +27 | 34 | 30.8 | 16.56R | V37 |
| 0029P | C2020 | 09 | 30.32159 | 02 | 48 | 38.86 | +27 | 34 | 30.5 | 16.61R | V37 |
| 0029P | KC2020 | 09 | 30.85824 | 02 | 48 | 28.41 | +27 | 34 | 29.5 | 16.33N | L27 6.6" |
| 0029P | KC2020 | 09 | 30.90686 | 02 | 48 | 27.42 | +27 | 34 | 30.0 | 16.21N | L27 |
| 0029P | KC2020 | 09 | 30.95296 | 02 | 48 | 26.50 | +27 | 34 | 29.7 | 16.34N | L27 |
| 0029P | KC2020 | 09 | 30.99741 | 02 | 48 | 25.58 | +27 | 34 | 29.9 | 16.40N | L27 |
| 0029P | KC2020 | 10 | 01.04185 | 02 | 48 | 24.66 | +27 | 34 | 29.4 | 16.36N | L27 |
| 0029P | KC2020 | 10 | 01.08481 | 02 | 48 | 23.69 | +27 | 34 | 30.4 | 16.42N | L27 |
| 0029P | KC2020 | 10 | 01.26171 | 02 | 48 | 20.34 | +27 | 34 | 29.4 | 16.58R | 718 5.2" 3x120s |
| 0029P | KC2020 | 10 | 01.26706 | 02 | 48 | 20.23 | +27 | 34 | 29.2 | 16.64R | 718 |
| 0029P | KC2020 | 10 | 01.27241 | 02 | 48 | 20.12 | +27 | 34 | 29.4 | 16.62R | 718 |
| 0029P | KC2020 | 10 | 01.69670 | 02 | 48 | 11.47 | +27 | 34 | 29.8 | 16.78R | Q63 5.5" 1.0-m r |
| 0029P | KC2020 | 10 | 02.26493 | 02 | 48 | 00.00 | +27 | 34 | 24.1 | 16.60R | 718 5.2" 3x120s |
| 0029P | KC2020 | 10 | 02.27028 | 02 | 47 | 59.86 | +27 | 34 | 24.5 | 16.53R | 718 |
| 0029P | KC2020 | 10 | 02.27561 | 02 | 47 | 59.76 | +27 | 34 | 23.9 | 16.58R | 718 |
| 0029P | C2020 | 10 | 03.24866 | 02 | 47 | 39.41 | +27 | 34 | 15.2 | 16.47R | 718 |
| 0029P | C2020 | 10 | 03.25400 | 02 | 47 | 39.29 | +27 | 34 | 15.0 | 16.58R | 718 5.2" 3x120s |
| 0029P | C2020 | 10 | 03.25935 | 02 | 47 | 39.16 | +27 | 34 | 15.1 | 16.45R | 718 |
| 0029P | KC2020 | 10 | 03.32376 | 02 | 47 | 37.67 | +27 | 34 | 16.2 | 16.43R | W96 5.9" |
| 0029P | KC2020 | 10 | 03.35445 | 02 | 47 | 37.01 | +27 | 34 | 15.8 | 16.49R | W96 |
| 0029P | KC2020 | 10 | 03.38092 | 02 | 47 | 36.42 | +27 | 34 | 15.6 | 16.44R | W96 |
| **mini-outburst at 2020 10 03.83 +/-0.36 16.60R => 16.25R | | | | | | | | | | | |
| 0029P | KC2020 | 10 | 04.28008 | 02 | 47 | 17.27 | +27 | 34 | 01.6 | 16.12R | 718 |
| 0029P | KC2020 | 10 | 04.28542 | 02 | 47 | 17.15 | +27 | 34 | 01.5 | 16.17R | 718 5.2" 4x120s |
| 0029P | KC2020 | 10 | 04.29076 | 02 | 47 | 17.01 | +27 | 34 | 01.4 | 16.16R | 718 |
| 0029P | KC2020 | 10 | 04.32950 | 02 | 47 | 16.07 | +27 | 34 | 02.3 | 16.18R | W96 |
| 0029P | KC2020 | 10 | 04.35508 | 02 | 47 | 15.50 | +27 | 34 | 02.0 | 16.21R | W96 5.9" 94% Moon |
| 0029P | KC2020 | 10 | 04.38055 | 02 | 47 | 14.91 | +27 | 34 | 02.3 | 16.41R | W96 |
| 0029P | C2020 | 10 | 04.45935 | 02 | 47 | 13.22 | +27 | 33 | 59.1 | 16.30R | V37 |
| 0029P | C2020 | 10 | 04.46036 | 02 | 47 | 13.19 | +27 | 33 | 59.0 | 16.18R | V37 5.5" 1.0-m r |
| 0029P | C2020 | 10 | 04.46137 | 02 | 47 | 13.18 | +27 | 33 | 59.1 | 16.23R | V37 |
| 0029P | KC2020 | 10 | 05.25957 | 02 | 46 | 55.73 | +27 | 33 | 44.0 | 16.16R | 718 |
| 0029P | KC2020 | 10 | 05.26492 | 02 | 46 | 55.63 | +27 | 33 | 43.6 | 16.16R | 718 5.2" 4x120s |
| 0029P | KC2020 | 10 | 05.27027 | 02 | 46 | 55.49 | +27 | 33 | 43.4 | 16.08R | 718 |

| | | | | | | | | | | | | |
|-----------------------|--------|----|----------|----|----|-------|-----|----|------|--------|--------------|------------------------|
| 0029P | KC2020 | 10 | 05.96646 | 02 | 46 | 39.78 | +27 | 33 | 28.9 | 16.25R | I81 | 5.2" |
| 0029P | KC2020 | 10 | 05.97007 | 02 | 46 | 39.70 | +27 | 33 | 28.8 | 16.17R | I81 | |
| 0029P | KC2020 | 10 | 05.97367 | 02 | 46 | 39.61 | +27 | 33 | 28.8 | 16.14R | I81 | |
| 0029P | KC2020 | 10 | 05.97733 | 02 | 46 | 39.54 | +27 | 33 | 28.7 | 16.21R | I81 | |
| 0029P | KC2020 | 10 | 05.98450 | 02 | 46 | 39.36 | +27 | 33 | 28.4 | 16.32R | I81 | thin cloud, exclude |
| 0029P | KC2020 | 10 | 06.41631 | 02 | 46 | 29.47 | +27 | 33 | 19.0 | 16.15R | 718 | |
| 0029P | KC2020 | 10 | 06.42166 | 02 | 46 | 29.36 | +27 | 33 | 18.9 | 16.27R | 718 | 5.2" 4x120s |
| 0029P | KC2020 | 10 | 06.42700 | 02 | 46 | 29.24 | +27 | 33 | 18.4 | 16.19R | 718 | |
| 0029P | KC2020 | 10 | 06.48753 | 02 | 46 | 27.90 | +27 | 33 | 19.8 | 16.20R | E94 | 6.1" 0.35-m |
| 10x60s RM | | | | | | | | | | | | |
| 0029P | KC2020 | 10 | 06.52689 | 02 | 46 | 27.00 | +27 | 33 | 16.5 | 16.27R | E94 | |
| 0029P | KC2020 | 10 | 06.61014 | 02 | 46 | 25.11 | +27 | 33 | 16.0 | 16.90R | E10 | 1.8" 2.0-m |
| 6x60s B=12500 | | | | | | | | | | | | |
| 0029P | KC2020 | 10 | 06.89589 | 02 | 46 | 18.57 | +27 | 33 | 06.5 | 16.40R | Z10 | |
| 0029P | KC2020 | 10 | 06.90056 | 02 | 46 | 18.46 | +27 | 33 | 06.5 | 16.37R | Z10 | 5.5" 6x60s |
| bright sky background | | | | | | | | | | | | |
| 0029P | KC2020 | 10 | 06.90603 | 02 | 46 | 18.34 | +27 | 33 | 06.1 | 16.42R | Z10 | |
| 0029P | KC2020 | 10 | 06.90977 | | | | | | | 16.23R | 970 | 5.8" 0.28-m |
| 10x60s | | | | | | | | | | | | |
| 0029P | KC2020 | 10 | 06.91753 | | | | | | | 16.29R | 970 | |
| 0029P | KC2020 | 10 | 06.94818 | 02 | 46 | 17.29 | +27 | 33 | 04.7 | 16.30R | I81 | 5.2" 5x60s |
| 0029P | KC2020 | 10 | 06.95178 | 02 | 46 | 17.23 | +27 | 33 | 04.5 | 16.25R | I81 | |
| 0029P | KC2020 | 10 | 06.96712 | 02 | 46 | 16.85 | +27 | 33 | 04.1 | 16.25R | I81 | |
| 0029P | KC2020 | 10 | 06.97072 | 02 | 46 | 16.77 | +27 | 33 | 04.1 | 16.17R | I81 | |
| 0029P | KC2020 | 10 | 06.9590 | | | | | | | 16.44 | Z80 | 6.0" +/-0.05 |
| mag 159x10s | | | | | | | | | | | | |
| 0029P | KC2020 | 10 | 07.23304 | 02 | 46 | 10.76 | +27 | 32 | 57.0 | 16.36R | 718 | |
| 0029P | KC2020 | 10 | 07.23839 | 02 | 46 | 10.62 | +27 | 32 | 56.7 | 16.35R | 718 | 5.2" 4x120s |
| 0029P | KC2020 | 10 | 07.24374 | 02 | 46 | 10.47 | +27 | 32 | 56.8 | 16.27R | 718 | |
| 0029P | dC2020 | 10 | 07.25124 | 02 | 46 | 10.28 | +27 | 32 | 56.9 | 16.22R | C. S. Morris | 4.84" |
| 0029P | dC2020 | 10 | 07.25443 | 02 | 46 | 10.23 | +27 | 32 | 57.1 | 16.35R | C. S. Morris | 4.84" |
| 0029P | dC2020 | 10 | 07.25949 | 02 | 46 | 10.09 | +27 | 32 | 56.8 | 16.33R | C. S. Morris | 4.84" |
| 0029P | dC2020 | 10 | 07.26169 | 02 | 46 | 10.07 | +27 | 32 | 56.7 | 16.30R | C. S. Morris | 4.84" |
| 0029P | dC2020 | 10 | 07.26536 | 02 | 46 | 09.98 | +27 | 32 | 56.7 | 16.30R | C. S. Morris | 4.84" |
| 0029P | dC2020 | 10 | 07.26787 | 02 | 46 | 09.93 | +27 | 32 | 56.7 | 16.27R | C. S. Morris | 4.84" |
| 0029P | dC2020 | 10 | 07.27060 | 02 | 46 | 09.84 | +27 | 32 | 56.5 | 16.38R | C. S. Morris | 4.84" |
| 0029P | dC2020 | 10 | 07.34524 | 02 | 46 | 08.09 | +27 | 32 | 54.5 | 16.36R | C. S. Morris | 4.84" |
| 0029P | KC2020 | 10 | 07.91609 | 02 | 45 | 54.65 | +27 | 32 | 37.1 | 16.35R | I81 | 5.2" 5x60s |
| 0029P | KC2020 | 10 | 07.94311 | 02 | 45 | 54.01 | +27 | 32 | 36.2 | 16.32R | I81 | |
| 0029P | KC2020 | 10 | 07.94671 | 02 | 45 | 53.93 | +27 | 32 | 36.3 | 16.33R | I81 | |
| 0029P | KC2020 | 10 | 07.95031 | 02 | 45 | 53.82 | +27 | 32 | 35.8 | 16.32R | I81 | |
| 0029P | KC2020 | 10 | 07.95392 | 02 | 45 | 53.74 | +27 | 32 | 35.5 | 16.35R | I81 | |
| 0029P | dC2020 | 10 | 08.21831 | 02 | 45 | 47.50 | +27 | 32 | 27.9 | 16.43R | C. S. Morris | 4.84" |
| 120s exp | | | | | | | | | | | | |
| 0029P | dC2020 | 10 | 08.22134 | 02 | 45 | 47.47 | +27 | 32 | 27.8 | 16.44R | C. S. Morris | 4.84" |
| 120s exp | | | | | | | | | | | | |
| 0029P | dC2020 | 10 | 08.22616 | 02 | 45 | 47.35 | +27 | 32 | 27.5 | 16.45R | C. S. Morris | 4.84" |
| 120s exp | | | | | | | | | | | | |
| 0029P | dC2020 | 10 | 08.22837 | 02 | 45 | 47.30 | +27 | 32 | 27.6 | 16.49R | C. S. Morris | 4.84" |
| 120s exp | | | | | | | | | | | | |
| 0029P | dC2020 | 10 | 08.23087 | 02 | 45 | 47.23 | +27 | 32 | 27.5 | 16.45R | C. S. Morris | 4.84" |
| 120s exp | | | | | | | | | | | | |
| 0029P | dC2020 | 10 | 08.23679 | 02 | 45 | 47.10 | +27 | 32 | 27.2 | 16.45R | C. S. Morris | 4.84" |
| 120s exp | | | | | | | | | | | | |
| 0029P | C2020 | 10 | 08.34987 | 02 | 45 | 44.33 | +27 | 32 | 23.8 | 16.39R | 718 | |
| 0029P | C2020 | 10 | 08.35522 | 02 | 45 | 44.19 | +27 | 32 | 23.5 | 16.42R | 718 | 5.2" 4x120s |
| 0029P | C2020 | 10 | 08.36057 | 02 | 45 | 44.06 | +27 | 32 | 23.4 | 16.41R | 718 | |
| 0029P | C2020 | 10 | 08.63688 | 02 | 45 | 37.41 | +27 | 32 | 16.1 | 16.38R | E10 | 5.4" 60s 2.0-m |
| r filter | | | | | | | | | | | | |
| 0029P | C2020 | 10 | 08.63775 | 02 | 45 | 37.41 | +27 | 32 | 16.1 | 16.42R | E10 | |
| 0029P | C2020 | 10 | 08.63864 | 02 | 45 | 37.38 | +27 | 32 | 16.0 | 16.42R | E10 | |
| 0029P | C2020 | 10 | 08.63953 | 02 | 45 | 37.36 | +27 | 32 | 16.0 | 16.42R | E10 | |
| 0029P | C2020 | 10 | 08.64041 | 02 | 45 | 37.37 | +27 | 32 | 15.9 | 16.37R | E10 | |

| | | | | | | | | | | | |
|--------------|---------------|----|----------|----|----|-------|-----|----|------|--------|--------------------|
| 0029P | C2020 | 10 | 08.64130 | 02 | 45 | 37.32 | +27 | 32 | 16.0 | 16.40R | E10 |
| 0029P | KC2020 | 10 | 08.82466 | 02 | 45 | 33.00 | +27 | 32 | 06.9 | 16.26N | L27 6.6" |
| 0029P | KC2020 | 10 | 08.84636 | 02 | 45 | 32.49 | +27 | 32 | 06.3 | 16.38N | L27 |
| 0029P | KC2020 | 10 | 08.87112 | 02 | 45 | 31.87 | +27 | 32 | 05.5 | 16.27N | L27 |
| 0029P | KC2020 | 10 | 08.88195 | 02 | 45 | 31.61 | +27 | 32 | 05.0 | 16.32N | L27 |
| 0029P | KC2020 | 10 | 08.83963 | 02 | 45 | 32.60 | +27 | 32 | 06.1 | 16.42R | I81 5.2" 3x60s |
| 0029P | KC2020 | 10 | 08.84179 | 02 | 45 | 32.55 | +27 | 32 | 06.1 | 16.46R | I81 |
| 0029P | KC2020 | 10 | 08.92174 | | | | | | | 16.21R | 970 5.8" 0.28-m |
| 10x60s field | star, exclude | | | | | | | | | | |
| 0029P | KC2020 | 10 | 09.02271 | | | | | | | 16.37R | 970 5.8" 0.28-m |
| 10x60s | | | | | | | | | | | |
| 0029P | C2020 | 10 | 09.35640 | | | | | | | 16.39R | H06 5.8" 0.43-m |
| f/4.5 | | | | | | | | | | | |
| 0029P | C2020 | 10 | 09.35726 | | | | | | | 16.42R | H06 |
| 0029P | C2020 | 10 | 09.35811 | | | | | | | 16.49R | H06 |
| 0029P | C2020 | 10 | 09.36178 | | | | | | | 16.53R | H06 |
| 0029P | C2020 | 10 | 09.36265 | | | | | | | 16.42R | H06 |
| 0029P | C2020 | 10 | 09.36351 | | | | | | | 16.32R | H06 |
| 0029P | C2020 | 10 | 09.36524 | | | | | | | 16.38R | H06 |
| 0029P | C2020 | 10 | 09.36661 | | | | | | | 16.39R | H06 |
| 0029P | C2020 | 10 | 09.36705 | | | | | | | 16.34R | H06 |
| 0029P | C2020 | 10 | 09.36749 | | | | | | | 16.29R | H06 |
| 0029P | C2020 | 10 | 09.63947 | 02 | 45 | 13.08 | +27 | 31 | 40.1 | 16.40R | E10 5.4" 60s 2.0-m |
| r filter | | | | | | | | | | | |
| 0029P | C2020 | 10 | 09.64036 | 02 | 45 | 13.06 | +27 | 31 | 40.1 | 16.41R | E10 |
| 0029P | C2020 | 10 | 09.64124 | 02 | 45 | 13.04 | +27 | 31 | 40.2 | 16.40R | E10 |
| 0029P | C2020 | 10 | 09.64213 | 02 | 45 | 13.02 | +27 | 31 | 40.2 | 16.40R | E10 |
| 0029P | C2020 | 10 | 09.64301 | 02 | 45 | 13.00 | +27 | 31 | 40.1 | 16.39R | E10 |
| 0029P | C2020 | 10 | 09.64389 | 02 | 45 | 12.98 | +27 | 31 | 40.0 | 16.39R | E10 |
| 0029P | KC2020 | 10 | 09.64168 | 02 | 45 | 13.05 | +27 | 31 | 40.1 | 16.40R | E10 5.4" 6x60s |
| stack | | | | | | | | | | | |
| 0029P | KC2020 | 10 | 09.64168 | 02 | 45 | 13.04 | +27 | 31 | 40.1 | 16.92R | E10 1.8" 6x60s |
| stack | | | | | | | | | | | |
| 0029P | KC2020 | 10 | 09.82429 | 02 | 45 | 08.59 | +27 | 31 | 30.3 | 16.39R | I81 5.2" 6x60s |
| 0029P | KC2020 | 10 | 09.82861 | 02 | 45 | 08.49 | +27 | 31 | 29.8 | 16.46R | I81 |
| 0029P | KC2020 | 10 | 09.83420 | 02 | 45 | 08.37 | +27 | 31 | 30.0 | 16.42R | I81 |
| 0029P | KC2020 | 10 | 09.83850 | 02 | 45 | 08.28 | +27 | 31 | 29.4 | 16.41R | I81 |
| 0029P | KC2020 | 10 | 09.83320 | 02 | 45 | 08.44 | +27 | 31 | 30.1 | 16.24N | L27 6.6" |
| 0029P | KC2020 | 10 | 09.87980 | 02 | 45 | 07.27 | +27 | 31 | 28.2 | 16.26N | L27 |
| 0029P | KC2020 | 10 | 09.92629 | 02 | 45 | 06.14 | +27 | 31 | 26.5 | 16.32N | L27 |
| 0029P | KC2020 | 10 | 09.97275 | 02 | 45 | 04.93 | +27 | 31 | 24.5 | 16.33N | L27 |
| 0029P | KC2020 | 10 | 10.01928 | 02 | 45 | 03.77 | +27 | 31 | 22.9 | 16.31N | L27 |
| 0029P | KC2020 | 10 | 10.06592 | 02 | 45 | 02.59 | +27 | 31 | 21.3 | 16.35N | L27 |
| 0029P | KC2020 | 10 | 10.11238 | 02 | 45 | 01.41 | +27 | 31 | 19.2 | 16.41N | L27 |
| 0029P | KC2020 | 10 | 10.15884 | 02 | 45 | 00.25 | +27 | 31 | 17.1 | 16.33N | L27 |
| 0029P | KC2020 | 10 | 10.19451 | 02 | 44 | 59.36 | +27 | 31 | 15.7 | 16.30N | L27 |
| 0029P | KC2020 | 10 | 09.9111 | | | | | | | 16.59R | Z80 6.0" +/-0.05 |
| mag 275x10s | | | | | | | | | | | |
| 0029P | KC2020 | 10 | 09.95565 | | | | | | | 16.45R | 970 |
| 0029P | KC2020 | 10 | 10.05407 | | | | | | | 16.48R | 970 5.8" 0.28-m |
| 10x60s | | | | | | | | | | | |
| 0029P | KC2020 | 10 | 10.09613 | | | | | | | 16.51R | 970 |
| 0029P | C2020 | 10 | 10.05130 | | | | | | | 16.51R | K01 5.1" 0.35-m |
| f/7.7 4x60s | | | | | | | | | | | |
| 0029P | C2020 | 10 | 10.05453 | | | | | | | 16.56R | K01 |
| 0029P | C2020 | 10 | 10.07157 | | | | | | | 16.48R | K01 |
| 0029P | C2020 | 10 | 10.07758 | | | | | | | 16.55R | K01 |
| 0029P | C2020 | 10 | 10.07758 | | | | | | | 16.49R | K01 |
| 0029P | KC2020 | 10 | 10.27956 | 02 | 44 | 57.37 | +27 | 31 | 12.9 | 16.42R | 718 |
| 0029P | KC2020 | 10 | 10.28491 | 02 | 44 | 57.25 | +27 | 31 | 12.5 | 16.43R | 718 5.2" 4x120s |
| 0029P | KC2020 | 10 | 10.29025 | 02 | 44 | 57.09 | +27 | 31 | 12.3 | 16.40R | 718 |
| 0029P | C2020 | 10 | 10.35524 | | | | | | | 16.43R | H06 5.8" 0.43-m |
| f/4.5 | | | | | | | | | | | |
| 0029P | C2020 | 10 | 10.35891 | | | | | | | 16.39R | H06 |
| 0029P | C2020 | 10 | 10.35978 | | | | | | | 16.43R | H06 |

| | | | |
|-------------------|--|--------|--------------------|
| 0029P 120s exp | dC2020 10 13.24560 02 43 41.82 +27 28 53.6 | 16.53R | C. S. Morris 4.84" |
| 0029P 120s exp | dC2020 10 13.24874 02 43 41.73 +27 28 53.4 | 16.47R | C. S. Morris 4.84" |
| 0029P 120s exp | dC2020 10 13.25178 02 43 41.65 +27 28 53.3 | 16.55R | C. S. Morris 4.84" |
| 0029P 120s exp | dC2020 10 13.43581 02 43 36.73 +27 28 42.9 | 16.51R | C. S. Morris 4.84" |
| 0029P 120s exp | dC2020 10 13.43822 02 43 36.65 +27 28 43.6 | 16.54R | C. S. Morris 4.84" |
| 0029P 120s exp | dC2020 10 13.44138 02 43 36.58 +27 28 42.9 | 16.51R | C. S. Morris 4.84" |
| 0029P 120s exp | dC2020 10 13.44348 02 43 36.51 +27 28 42.9 | 16.51R | C. S. Morris 4.84" |
| 0029P mag | KC2020 10 13.60744 02 43 32.27 +27 28 35.6 | 16.48R | Q58 5.7" +/-0.08 |
| 0029P aperture | KC2020 10 13.87082 02 43 25.44 +27 28 19.1 | 16.46R | Z10 field star in |
| 0029P | KC2020 10 13.87549 02 43 25.31 +27 28 18.8 | 16.55R | Z10 5.5" 5x60s |
| 0029P | KC2020 10 13.88016 02 43 25.18 +27 28 18.4 | 16.57R | Z10 |
| 0029P | KC2020 10 13.95120 02 43 23.23 +27 28 14.1 | 16.48R | I81 |
| 0029P | KC2020 10 13.97779 02 43 22.51 +27 28 12.6 | 16.56R | I81 |
| 0029P | KC2020 10 13.97920 02 43 22.47 +27 28 12.6 | 16.54R | I81 |
| 0029P | KC2020 10 13.98062 02 43 22.43 +27 28 12.4 | 16.52R | I81 |
| 0029P | KC2020 10 13.98205 02 43 22.40 +27 28 12.4 | 16.52R | I81 |
| 0029P | KC2020 10 13.98348 02 43 22.36 +27 28 12.3 | 16.53R | I81 |
| 0029P | KC2020 10 13.98490 02 43 22.32 +27 28 12.2 | 16.56R | I81 |
| 0029P | KC2020 10 13.98633 02 43 22.28 +27 28 12.2 | 16.56R | I81 |
| 0029P 120s exp | dC2020 10 14.23917 02 43 15.65 +27 27 58.6 | 16.46R | C. S. Morris 4.84" |
| 0029P 120s exp | dC2020 10 14.24211 02 43 15.59 +27 27 58.4 | 16.52R | C. S. Morris 4.84" |
| 0029P 120s exp | dC2020 10 14.24594 02 43 15.47 +27 27 58.4 | 16.51R | C. S. Morris 4.84" |
| 0029P 120s exp | dC2020 10 14.24826 02 43 15.40 +27 27 58.3 | 16.54R | C. S. Morris 4.84" |
| 0029P 120s exp | dC2020 10 14.25078 02 43 15.32 +27 27 57.5 | 16.61R | C. S. Morris 4.84" |
| 0029P 120s exp | dC2020 10 14.25329 02 43 15.29 +27 27 58.0 | 16.62R | C. S. Morris 4.84" |
| 0029P 120s exp | dC2020 10 14.25591 02 43 15.22 +27 27 57.9 | 16.46R | C. S. Morris 4.84" |
| 0029P | C2020 10 14.57543 02 43 06.57 +27 27 39.2 | 16.46R | T04 poorer SNR |
| 0029P | C2020 10 14.57697 02 43 06.52 +27 27 39.1 | 16.51R | T04 5.7" |
| 0029P | C2020 10 14.57852 02 43 06.48 +27 27 39.1 | 16.62R | T04 |
| 0029P | KC2020 10 14.79968 02 43 00.74 +27 27 24.3 | 16.40N | L27 6.6" |
| 0029P | KC2020 10 14.85694 02 42 59.23 +27 27 21.4 | 16.43N | L27 |
| 0029P | KC2020 10 15.19823 02 42 50.06 +27 27 01.3 | 16.45R | 718 |
| 0029P | KC2020 10 15.20128 02 42 49.95 +27 27 00.9 | 16.40R | 718 |
| 0029P | KC2020 10 15.20434 02 42 49.89 +27 27 00.6 | 16.52R | 718 5.2" 2x120s |
| 0029P | KC2020 10 15.20739 02 42 49.80 +27 27 00.5 | 16.44R | 718 |
| 0029P | KC2020 10 15.21045 02 42 49.69 +27 27 00.4 | 16.52R | 718 |
| 0029P 120s exp | dC2020 10 15.24953 02 42 48.67 +27 26 58.1 | 16.48R | C. S. Morris 4.84" |
| 0029P 120s exp | dC2020 10 15.25488 02 42 48.50 +27 26 58.1 | 16.48R | C. S. Morris 4.84" |
| 0029P 120s exp | dC2020 10 15.25803 02 42 48.41 +27 26 57.9 | 16.55R | C. S. Morris 4.84" |
| 0029P 120s exp | dC2020 10 15.26075 02 42 48.36 +27 26 57.4 | 16.49R | C. S. Morris 4.84" |
| 0029P 120s exp | dC2020 10 15.26337 02 42 48.31 +27 26 57.1 | 16.60R | C. S. Morris 4.84" |
| 0029P 120s exp | dC2020 10 15.26631 02 42 48.21 +27 26 57.1 | 16.56R | C. S. Morris 4.84" |
| 0029P 120s exp | dC2020 10 15.42594 02 42 43.77 +27 26 47.4 | 16.64R | C. S. Morris 4.84" |

| | | | | | | | | | | | |
|----------|--------|----|----------|----|----|-------|-----|----|------|--------|--------------------|
| 0029P | dC2020 | 10 | 15.42775 | 02 | 42 | 43.75 | +27 | 26 | 47.3 | 16.57R | C. S. Morris 4.84" |
| 120s exp | | | | | | | | | | | |
| 0029P | dC2020 | 10 | 15.43027 | 02 | 42 | 43.67 | +27 | 26 | 47.2 | 16.60R | C. S. Morris 4.84" |
| 120s exp | | | | | | | | | | | |
| 0029P | dC2020 | 10 | 15.43279 | 02 | 42 | 43.58 | +27 | 26 | 47.1 | 16.67R | C. S. Morris 4.84" |
| 120s exp | | | | | | | | | | | |
| 0029P | dC2020 | 10 | 15.43491 | 02 | 42 | 43.56 | +27 | 26 | 47.1 | 16.60R | C. S. Morris 4.84" |
| 120s exp | | | | | | | | | | | |
| 0029P | dC2020 | 10 | 15.43689 | 02 | 42 | 43.48 | +27 | 26 | 47.1 | 16.60R | C. S. Morris 4.84" |
| 120s exp | | | | | | | | | | | |

| | | | | | | | | | | | |
|--------|-------|----|----------|----|----|-------|-----|----|------|--------|-----------------|
| 0029P | C2020 | 10 | 15.55012 | 02 | 42 | 40.41 | +27 | 26 | 39.7 | 16.61R | T04 |
| 0029P | C2020 | 10 | 15.55167 | 02 | 42 | 40.37 | +27 | 26 | 40.0 | 16.47R | T04 5.7" 120s r |
| filter | | | | | | | | | | | |
| 0029P | C2020 | 10 | 15.55322 | 02 | 42 | 40.32 | +27 | 26 | 39.9 | 16.50R | T04 |
| 0029P | C2020 | 10 | 15.55476 | 02 | 42 | 40.28 | +27 | 26 | 39.7 | 16.53R | T04 |

| | | | | | | | | | | | |
|-------|-------|----|----------|----|----|-------|-----|----|------|--------|----------|
| 0029P | C2020 | 10 | 15.84799 | 02 | 42 | 32.51 | +27 | 26 | 20.8 | 16.60R | 213 5.4" |
| 0029P | C2020 | 10 | 15.89272 | 02 | 42 | 31.26 | +27 | 26 | 17.2 | 16.72R | 213 |
| 0029P | C2020 | 10 | 15.89767 | 02 | 42 | 31.12 | +27 | 26 | 17.2 | 16.79R | 213 |
| 0029P | C2020 | 10 | 15.90263 | 02 | 42 | 30.99 | +27 | 26 | 17.0 | 16.73R | 213 |
| 0029P | C2020 | 10 | 15.90758 | 02 | 42 | 30.85 | +27 | 26 | 16.8 | 16.75R | 213 |
| 0029P | C2020 | 10 | 15.91255 | 02 | 42 | 30.74 | +27 | 26 | 16.4 | 16.68R | 213 |

| | | | | | | | | | | | |
|---------|-------|----|----------|----|----|-------|-----|----|------|--------|----------------|
| 0029P | C2020 | 10 | 15.96140 | 02 | 42 | 29.38 | +27 | 26 | 12.9 | 16.56G | 232 FoCAs Gaia |
| E.Reina | | | | | | | | | | | |

**mini-outburst at 2020 10 16.08 +/-0.09 16.55R => 16.10R

| | | | | | | | | | | | |
|-------|-------|----|----------|----|----|-------|-----|----|------|--------|--------------------|
| 0029P | C2020 | 10 | 16.19739 | 02 | 42 | 23.06 | +27 | 25 | 57.7 | 16.00R | 718 5.2" star near |
| 0029P | C2020 | 10 | 16.19892 | 02 | 42 | 23.00 | +27 | 25 | 57.0 | 16.08R | 718 5.2" star near |
| 0029P | C2020 | 10 | 16.20045 | 02 | 42 | 23.00 | +27 | 25 | 57.1 | 16.08R | 718 5.2" star near |
| 0029P | C2020 | 10 | 16.20197 | 02 | 42 | 22.98 | +27 | 25 | 56.7 | 16.02R | 718 5.2" star near |
| 0029P | C2020 | 10 | 16.20350 | 02 | 42 | 22.90 | +27 | 25 | 56.8 | 16.07R | 718 |
| 0029P | C2020 | 10 | 16.20503 | 02 | 42 | 22.82 | +27 | 25 | 56.8 | 16.04R | 718 |
| 0029P | C2020 | 10 | 16.20656 | 02 | 42 | 22.77 | +27 | 25 | 56.2 | 16.10R | 718 |
| 0029P | C2020 | 10 | 16.20809 | 02 | 42 | 22.68 | +27 | 25 | 56.0 | 16.14R | 718 |
| 0029P | C2020 | 10 | 16.20961 | 02 | 42 | 22.67 | +27 | 25 | 56.1 | 16.15R | 718 |
| 0029P | C2020 | 10 | 16.21115 | 02 | 42 | 22.61 | +27 | 25 | 56.2 | 16.10R | 718 |

| | | | | | | | | | | | |
|-------|--------|----|----------|----|----|-------|-----|----|------|--------|--------------------|
| 0029P | KC2020 | 10 | 16.40848 | 02 | 42 | 17.17 | +27 | 25 | 45.6 | 16.03R | E94 |
| 0029P | KC2020 | 10 | 16.44075 | 02 | 42 | 16.29 | +27 | 25 | 43.5 | 15.96R | E94 |
| 0029P | KC2020 | 10 | 16.44625 | 02 | 42 | 16.12 | +27 | 25 | 43.2 | 16.07R | E94 |
| 0029P | KC2020 | 10 | 16.48814 | 02 | 42 | 14.96 | +27 | 25 | 40.2 | 15.88R | E94 |
| 0029P | KC2020 | 10 | 16.53229 | 02 | 42 | 13.73 | +27 | 25 | 37.6 | 15.96R | E94 |
| 0029P | KC2020 | 10 | 16.53229 | 02 | 42 | 13.74 | +27 | 25 | 37.6 | 16.01R | E94 6.1" 0.35-m RM |
| 0029P | KC2020 | 10 | 16.53781 | 02 | 42 | 13.58 | +27 | 25 | 37.1 | 16.03R | E94 |
| 0029P | KC2020 | 10 | 16.58227 | 02 | 42 | 12.32 | +27 | 25 | 35.2 | 16.15R | E94 |
| 0029P | KC2020 | 10 | 16.58779 | 02 | 42 | 12.18 | +27 | 25 | 35.4 | 16.10R | E94 |
| 0029P | KC2020 | 10 | 16.62130 | 02 | 42 | 11.23 | +27 | 25 | 32.0 | 16.12R | E94 |
| 0029P | KC2020 | 10 | 16.62130 | 02 | 42 | 11.23 | +27 | 25 | 32.0 | 16.12R | E94 |
| 0029P | KC2020 | 10 | 16.62687 | 02 | 42 | 11.11 | +27 | 25 | 31.8 | 16.15R | E94 |

| | | | | | | | | | | | |
|-------|-------|----|----------|----|----|-------|-----|----|------|--------|-----------------|
| 0029P | C2020 | 10 | 16.59547 | 02 | 42 | 11.88 | +27 | 25 | 31.7 | 16.13R | T04 5.7" r 120s |
| 0029P | C2020 | 10 | 16.59702 | 02 | 42 | 11.86 | +27 | 25 | 31.7 | 16.17R | T04 |
| 0029P | C2020 | 10 | 16.59857 | 02 | 42 | 11.86 | +27 | 25 | 32.5 | 16.22R | T04 |
| 0029P | C2020 | 10 | 16.60011 | 02 | 42 | 11.78 | +27 | 25 | 31.6 | 16.11R | T04 |

| | | | | | | | | | | | |
|-------|--------|----|----------|----|----|-------|-----|----|------|--------|-------------------|
| 0029P | KC2020 | 10 | 16.77137 | 02 | 42 | 07.26 | +27 | 25 | 18.4 | 16.06R | J77 |
| 0029P | KC2020 | 10 | 16.77853 | 02 | 42 | 07.04 | +27 | 25 | 18.2 | 16.11R | J77 |
| 0029P | KC2020 | 10 | 16.78734 | 02 | 42 | 06.81 | +27 | 25 | 17.6 | 16.11R | J77 5.4" r 10x60s |
| 0029P | KC2020 | 10 | 16.79449 | 02 | 42 | 06.64 | +27 | 25 | 17.1 | 16.06R | J77 |
| 0029P | KC2020 | 10 | 16.80094 | 02 | 42 | 06.46 | +27 | 25 | 16.7 | 16.09R | J77 |

| | | | | | | | | | | | |
|-------|--------|----|----------|----|----|-------|-----|----|------|--------|----------|
| 0029P | KC2020 | 10 | 16.80528 | 02 | 42 | 06.34 | +27 | 25 | 16.8 | 15.96N | L27 6.6" |
| 0029P | KC2020 | 10 | 16.85179 | 02 | 42 | 05.04 | +27 | 25 | 13.7 | 15.98N | L27 |
| 0029P | KC2020 | 10 | 16.89904 | 02 | 42 | 03.73 | +27 | 25 | 10.4 | 15.96N | L27 |
| 0029P | KC2020 | 10 | 16.94564 | 02 | 42 | 02.43 | +27 | 25 | 07.4 | 16.01N | L27 |
| 0029P | KC2020 | 10 | 16.99216 | 02 | 42 | 01.12 | +27 | 25 | 04.1 | 15.98N | L27 |
| 0029P | KC2020 | 10 | 17.04083 | 02 | 41 | 59.75 | +27 | 25 | 01.0 | 15.93N | L27 |
| 0029P | KC2020 | 10 | 17.08734 | 02 | 41 | 58.44 | +27 | 24 | 57.6 | 15.99N | L27 |
| 0029P | KC2020 | 10 | 17.13394 | 02 | 41 | 57.12 | +27 | 24 | 54.3 | 15.96N | L27 |
| 0029P | KC2020 | 10 | 17.18066 | 02 | 41 | 55.81 | +27 | 24 | 50.8 | 16.02N | L27 |
| 0029P | KC2020 | 10 | 17.20063 | 02 | 41 | 55.27 | +27 | 24 | 49.4 | 15.92N | L27 |

| | | | | | | | | | | | |
|-------|-------|----|----------|----|----|-------|-----|----|------|--------|------------------|
| 0029P | C2020 | 10 | 16.95321 | 02 | 42 | 02.18 | +27 | 25 | 06.6 | 16.13R | I81 5.2" 10x120s |
|-------|-------|----|----------|----|----|-------|-----|----|------|--------|------------------|

| | | | | | | | | | | | |
|-------------------|--------|----|----------|----|----|-------|-----|----|------|--------|---------------------|
| 0029P | C2020 | 10 | 16.95462 | 02 | 42 | 02.14 | +27 | 25 | 06.4 | 16.15R | I81 |
| 0029P | C2020 | 10 | 16.95605 | 02 | 42 | 02.10 | +27 | 25 | 06.4 | 16.09R | I81 |
| 0029P | C2020 | 10 | 16.95747 | 02 | 42 | 02.07 | +27 | 25 | 06.2 | 16.10R | I81 |
| 0029P | C2020 | 10 | 16.95890 | 02 | 42 | 02.02 | +27 | 25 | 06.1 | 16.11R | I81 |
| 0029P | C2020 | 10 | 16.96032 | 02 | 42 | 01.98 | +27 | 25 | 06.0 | 16.16R | I81 |
| 0029P | C2020 | 10 | 16.96175 | 02 | 42 | 01.94 | +27 | 25 | 06.0 | 16.14R | I81 |
| 0029P | C2020 | 10 | 16.96317 | 02 | 42 | 01.90 | +27 | 25 | 05.8 | 16.09R | I81 |
| 0029P | C2020 | 10 | 16.96460 | 02 | 42 | 01.87 | +27 | 25 | 05.8 | 16.07R | I81 |
| 0029P | C2020 | 10 | 16.96602 | 02 | 42 | 01.83 | +27 | 25 | 05.7 | 16.08R | I81 |
| 0029P E.Reina | C2020 | 10 | 17.01389 | 02 | 42 | 00.49 | +27 | 25 | 02.7 | 16.08G | 232 FoCAS Gaia |
| 0029P | C2020 | 10 | 17.21242 | 02 | 41 | 55.09 | +27 | 24 | 48.9 | 16.13R | 718 |
| 0029P | C2020 | 10 | 17.21395 | 02 | 41 | 55.06 | +27 | 24 | 48.8 | 16.21R | 718 |
| 0029P time | C2020 | 10 | 17.21548 | 02 | 41 | 55.02 | +27 | 24 | 48.9 | 16.16R | 718 star after this |
| 0029P 120s exp | dC2020 | 10 | 17.26738 | 02 | 41 | 53.58 | +27 | 24 | 45.4 | 16.15R | C. S. Morris 4.84" |
| 0029P 120s exp | dC2020 | 10 | 17.27064 | 02 | 41 | 53.49 | +27 | 24 | 45.2 | 16.17R | C. S. Morris 4.84" |
| 0029P 120s exp | dC2020 | 10 | 17.27367 | 02 | 41 | 53.40 | +27 | 24 | 45.1 | 16.13R | C. S. Morris 4.84" |
| 0029P 120s exp | dC2020 | 10 | 17.27630 | 02 | 41 | 53.29 | +27 | 24 | 44.5 | 16.12R | C. S. Morris 4.84" |
| 0029P 120s exp | dC2020 | 10 | 17.27954 | 02 | 41 | 53.23 | +27 | 24 | 44.9 | 16.10R | C. S. Morris 4.84" |
| 0029P 120s exp | dC2020 | 10 | 17.28516 | 02 | 41 | 53.05 | +27 | 24 | 44.2 | 16.11R | C. S. Morris 4.84" |
| 0029P | KC2020 | 10 | 17.78616 | 02 | 41 | 39.20 | +27 | 24 | 07.8 | 15.93N | L27 6.6" |
| 0029P | KC2020 | 10 | 17.87918 | 02 | 41 | 36.61 | +27 | 24 | 01.5 | 15.90N | L27 |
| 0029P | KC2020 | 10 | 17.92565 | 02 | 41 | 35.30 | +27 | 23 | 57.9 | 15.91N | L27 |
| 0029P | KC2020 | 10 | 17.97217 | 02 | 41 | 33.98 | +27 | 23 | 54.6 | 15.88N | L27 |
| 0029P | KC2020 | 10 | 18.01871 | 02 | 41 | 32.64 | +27 | 23 | 51.6 | 15.95N | L27 |
| 0029P | KC2020 | 10 | 18.06759 | 02 | 41 | 31.24 | +27 | 23 | 47.6 | 15.95N | L27 |
| 0029P | KC2020 | 10 | 18.11408 | 02 | 41 | 29.93 | +27 | 23 | 44.4 | 15.97N | L27 |
| 0029P | KC2020 | 10 | 18.16056 | 02 | 41 | 28.59 | +27 | 23 | 40.8 | 15.96N | L27 |
| 0029P | KC2020 | 10 | 18.19977 | 02 | 41 | 27.49 | +27 | 23 | 37.9 | 15.93N | L27 |
| 0029P | KC2020 | 10 | 17.99614 | 02 | 41 | 33.26 | +27 | 23 | 53.2 | 16.03R | 204 |
| 0029P | KC2020 | 10 | 18.06279 | 02 | 41 | 31.36 | +27 | 23 | 48.3 | 16.06R | 204 |
| 0029P | C2020 | 10 | 18.14680 | 02 | 41 | 29.13 | +27 | 23 | 42.2 | 16.24R | V38 5.7" r 120s |
| 0029P | C2020 | 10 | 18.14829 | 02 | 41 | 29.11 | +27 | 23 | 41.9 | 16.35R | V38 |
| 0029P | C2020 | 10 | 18.14978 | 02 | 41 | 29.06 | +27 | 23 | 41.8 | 16.13R | V38 |
| 0029P | C2020 | 10 | 18.15127 | 02 | 41 | 29.01 | +27 | 23 | 41.7 | 16.12R | V38 |
| 0029P 120s exp | dC2020 | 10 | 18.21108 | 02 | 41 | 27.30 | +27 | 23 | 37.8 | 16.16R | C. S. Morris 4.84" |
| 0029P 120s exp | dC2020 | 10 | 18.21442 | 02 | 41 | 27.25 | +27 | 23 | 37.3 | 16.12R | C. S. Morris 4.84" |
| 0029P 120s exp | dC2020 | 10 | 18.22164 | 02 | 41 | 27.04 | +27 | 23 | 36.7 | 16.15R | C. S. Morris 4.84" |
| 0029P 120s exp | dC2020 | 10 | 18.22751 | 02 | 41 | 26.87 | +27 | 23 | 36.3 | 16.09R | C. S. Morris 4.84" |
| 0029P 120s exp | dC2020 | 10 | 18.22981 | 02 | 41 | 26.81 | +27 | 23 | 36.1 | 16.10R | C. S. Morris 4.84" |
| 0029P | C2020 | 10 | 18.25961 | 02 | 41 | 25.94 | +27 | 23 | 33.7 | 16.09R | 718 5.2" |
| 0029P | C2020 | 10 | 18.26114 | 02 | 41 | 25.88 | +27 | 23 | 33.4 | 16.00R | 718 |
| 0029P | C2020 | 10 | 18.26266 | 02 | 41 | 25.81 | +27 | 23 | 33.8 | 16.02R | 718 |
| 0029P | C2020 | 10 | 18.26419 | 02 | 41 | 25.80 | +27 | 23 | 33.9 | 16.12R | 718 |
| 0029P | C2020 | 10 | 18.26572 | 02 | 41 | 25.82 | +27 | 23 | 32.9 | 16.07R | 718 |
| 0029P | C2020 | 10 | 18.26725 | 02 | 41 | 25.74 | +27 | 23 | 33.3 | 16.06R | 718 |
| 0029P | C2020 | 10 | 18.26877 | 02 | 41 | 25.66 | +27 | 23 | 33.2 | 16.08R | 718 |
| 0029P | C2020 | 10 | 18.27030 | 02 | 41 | 25.68 | +27 | 23 | 33.4 | 16.07R | 718 |
| 0029P | C2020 | 10 | 18.27183 | 02 | 41 | 25.60 | +27 | 23 | 32.9 | 16.07R | 718 |
| 0029P | C2020 | 10 | 18.27336 | 02 | 41 | 25.57 | +27 | 23 | 32.9 | 16.05R | 718 |
| 0029P 120s | C2020 | 10 | 18.28318 | | | | | | | 16.09R | H06 5.8" 0.43-m |
| 0029P 240s | KC2020 | 10 | 18.28556 | | | | | | | 16.03R | H06 |
| 0029P | C2020 | 10 | 18.59102 | 02 | 41 | 16.46 | +27 | 23 | 09.7 | 16.17R | T04 5.7" r 120s |

| | | | | | | | | | | | |
|--------|--------|----|----------|----|----|-------|-----|----|------|--------|--------------------|
| 0029P | C2020 | 10 | 18.59256 | 02 | 41 | 16.47 | +27 | 23 | 09.3 | 16.05R | T04 |
| 0029P | C2020 | 10 | 18.59411 | 02 | 41 | 16.42 | +27 | 23 | 09.4 | 16.14R | T04 |
| 0029P | C2020 | 10 | 18.59565 | 02 | 41 | 16.38 | +27 | 23 | 09.0 | 16.12R | T04 |
| 0029P | KC2020 | 10 | 18.78947 | 02 | 41 | 11.13 | +27 | 22 | 53.8 | 16.03N | L27 6.6" |
| 0029P | KC2020 | 10 | 18.83600 | 02 | 41 | 09.81 | +27 | 22 | 50.0 | 15.97N | L27 |
| 0029P | KC2020 | 10 | 18.88256 | 02 | 41 | 08.46 | +27 | 22 | 46.4 | 15.94N | L27 |
| 0029P | KC2020 | 10 | 18.92915 | 02 | 41 | 07.15 | +27 | 22 | 43.0 | 15.90N | L27 |
| 0029P | KC2020 | 10 | 18.97575 | 02 | 41 | 05.82 | +27 | 22 | 39.7 | 15.94N | L27 |
| 0029P | KC2020 | 10 | 19.02475 | 02 | 41 | 04.39 | +27 | 22 | 35.6 | 15.85N | L27 |
| 0029P | KC2020 | 10 | 19.07131 | 02 | 41 | 03.05 | +27 | 22 | 32.2 | 15.91N | L27 |
| 0029P | KC2020 | 10 | 19.11786 | 02 | 41 | 01.73 | +27 | 22 | 28.9 | 15.79N | L27 |
| 0029P | KC2020 | 10 | 19.16763 | 02 | 41 | 00.28 | +27 | 22 | 24.7 | 15.92N | L27 |
| 0029P | KC2020 | 10 | 19.19651 | 02 | 40 | 59.46 | +27 | 22 | 22.4 | 15.87N | L27 |
| 0029P | KC2020 | 10 | 18.90182 | 02 | 41 | 07.91 | +27 | 22 | 45.3 | 16.03R | 204 |
| 0029P | C2020 | 10 | 19.20535 | 02 | 40 | 59.38 | +27 | 22 | 21.9 | 16.21R | 718 5.2" |
| 0029P | C2020 | 10 | 19.20687 | 02 | 40 | 59.36 | +27 | 22 | 21.5 | 16.21R | 718 |
| 0029P | C2020 | 10 | 19.20840 | 02 | 40 | 59.25 | +27 | 22 | 21.4 | 16.20R | 718 |
| 0029P | C2020 | 10 | 19.20993 | 02 | 40 | 59.25 | +27 | 22 | 21.6 | 16.13R | 718 |
| 0029P | C2020 | 10 | 19.21146 | 02 | 40 | 59.23 | +27 | 22 | 21.5 | 16.22R | 718 |
| 0029P | C2020 | 10 | 19.21299 | 02 | 40 | 59.13 | +27 | 22 | 21.5 | 16.14R | 718 |
| 0029P | C2020 | 10 | 19.21451 | 02 | 40 | 59.10 | +27 | 22 | 20.9 | 16.20R | 718 |
| 0029P | C2020 | 10 | 19.21604 | 02 | 40 | 59.10 | +27 | 22 | 21.0 | 16.14R | 718 |
| 0029P | C2020 | 10 | 19.21757 | 02 | 40 | 59.02 | +27 | 22 | 20.9 | 16.17R | 718 |
| 0029P | C2020 | 10 | 19.21910 | 02 | 40 | 58.99 | +27 | 22 | 20.9 | 16.16R | 718 |
| 0029P | C2020 | 10 | 19.34015 | | | | | | | 16.24R | H06 5.8" 0.43-m |
| 240s | | | | | | | | | | | |
| 0029P | KC2020 | 10 | 19.34346 | | | | | | | 16.21R | H06 |
| 240s | | | | | | | | | | | |
| 0029P | C2020 | 10 | 19.56920 | 02 | 40 | 49.01 | +27 | 21 | 55.1 | 16.14R | E10 5.4" r filter |
| 0029P | C2020 | 10 | 19.57008 | 02 | 40 | 48.99 | +27 | 21 | 55.2 | 16.10R | E10 |
| 0029P | C2020 | 10 | 19.57096 | 02 | 40 | 48.96 | +27 | 21 | 55.0 | 16.15R | E10 |
| 0029P | C2020 | 10 | 19.57185 | 02 | 40 | 48.93 | +27 | 21 | 54.9 | 16.13R | E10 |
| 0029P | C2020 | 10 | 19.57273 | 02 | 40 | 48.91 | +27 | 21 | 55.1 | 16.11R | E10 |
| 0029P | C2020 | 10 | 19.57361 | 02 | 40 | 48.88 | +27 | 21 | 54.5 | 16.09R | E10 |
| 0029P | KC2020 | 10 | 19.57141 | 02 | 40 | 48.96 | +27 | 21 | 54.9 | 16.12R | E10 5.4" 6x60s |
| 0029P | KC2020 | 10 | 19.57141 | 02 | 40 | 48.96 | +27 | 21 | 54.9 | 16.60R | E10 1.8" 6x60s |
| 0029P | KC2020 | 10 | 19.80953 | 02 | 40 | 42.22 | +27 | 21 | 33.3 | 15.77N | L27 |
| 0029P | KC2020 | 10 | 19.81820 | 02 | 40 | 41.97 | +27 | 21 | 32.9 | 16.10N | L27 6.6" |
| 0029P | KC2020 | 10 | 19.82761 | 02 | 40 | 41.74 | +27 | 21 | 32.5 | 16.01N | L27 |
| 0029P | C2020 | 10 | 19.81138 | 02 | 40 | 42.19 | +27 | 21 | 33.6 | 16.24R | 213 5.4" |
| 0029P | C2020 | 10 | 19.81608 | 02 | 40 | 42.05 | +27 | 21 | 33.2 | 16.27R | 213 |
| 0029P | C2020 | 10 | 19.82078 | 02 | 40 | 41.92 | +27 | 21 | 33.1 | 16.30R | 213 |
| 0029P | C2020 | 10 | 19.82547 | 02 | 40 | 41.80 | +27 | 21 | 32.7 | 16.30R | 213 |
| 0029P | C2020 | 10 | 20.25225 | 02 | 40 | 29.60 | +27 | 20 | 58.0 | 16.18R | 718 5.2" |
| 0029P | C2020 | 10 | 20.25378 | 02 | 40 | 29.54 | +27 | 20 | 57.8 | 16.20R | 718 |
| 0029P | C2020 | 10 | 20.25531 | 02 | 40 | 29.51 | +27 | 20 | 57.7 | 16.19R | 718 |
| 0029P | C2020 | 10 | 20.25683 | 02 | 40 | 29.45 | +27 | 20 | 57.6 | 16.16R | 718 |
| 0029P | C2020 | 10 | 20.25836 | 02 | 40 | 29.41 | +27 | 20 | 57.8 | 16.20R | 718 |
| 0029P | C2020 | 10 | 20.25989 | 02 | 40 | 29.37 | +27 | 20 | 57.4 | 16.18R | 718 |
| 0029P | C2020 | 10 | 20.26142 | 02 | 40 | 29.32 | +27 | 20 | 57.4 | 16.14R | 718 |
| 0029P | C2020 | 10 | 20.26294 | 02 | 40 | 29.28 | +27 | 20 | 57.1 | 16.19R | 718 |
| 0029P | C2020 | 10 | 20.26447 | 02 | 40 | 29.23 | +27 | 20 | 57.1 | 16.21R | 718 |
| 0029P | C2020 | 10 | 20.55327 | 02 | 40 | 20.95 | +27 | 20 | 35.0 | 16.19R | E10 5.4" near star |
| 0029P | C2020 | 10 | 20.55415 | 02 | 40 | 20.93 | +27 | 20 | 35.0 | 16.23R | E10 |
| 0029P | C2020 | 10 | 20.55503 | 02 | 40 | 20.90 | +27 | 20 | 34.9 | 16.27R | E10 |
| 0029P | C2020 | 10 | 20.55592 | 02 | 40 | 20.88 | +27 | 20 | 34.7 | 16.26R | E10 |
| 0029P | C2020 | 10 | 20.55680 | 02 | 40 | 20.86 | +27 | 20 | 34.9 | 16.23R | E10 |
| 0029P | C2020 | 10 | 20.55768 | 02 | 40 | 20.82 | +27 | 20 | 34.7 | 16.27R | E10 |
| 0029PA | C2020 | 10 | 20.55327 | 02 | 40 | 20.95 | +27 | 20 | 35.1 | 16.23R | E10 corr |
| 0029P | C2020 | 10 | 21.21473 | 02 | 40 | 01.95 | +27 | 19 | 36.3 | 16.30R | 718 5.2" |
| 0029P | C2020 | 10 | 21.21625 | 02 | 40 | 01.94 | +27 | 19 | 37.0 | 16.30R | 718 |
| 0029P | C2020 | 10 | 21.21778 | 02 | 40 | 01.88 | +27 | 19 | 36.9 | 16.33R | 718 |
| 0029P | C2020 | 10 | 21.21931 | 02 | 40 | 01.84 | +27 | 19 | 36.7 | 16.31R | 718 |
| 0029P | C2020 | 10 | 21.22084 | 02 | 40 | 01.76 | +27 | 19 | 36.6 | 16.26R | 718 |
| 0029P | C2020 | 10 | 21.22236 | 02 | 40 | 01.74 | +27 | 19 | 36.8 | 16.29R | 718 |
| 0029P | C2020 | 10 | 21.22389 | 02 | 40 | 01.72 | +27 | 19 | 36.4 | 16.28R | 718 |
| 0029P | C2020 | 10 | 21.22542 | 02 | 40 | 01.64 | +27 | 19 | 36.7 | 16.28R | 718 |

| | | | | | | | | | | | |
|---|--------|----|----------|----|----|-------|-----|----|------|--------|---------------------|
| 0029P | C2020 | 10 | 21.22695 | 02 | 40 | 01.62 | +27 | 19 | 36.3 | 16.31R | 718 |
| 0029P | C2020 | 10 | 21.22848 | 02 | 40 | 01.58 | +27 | 19 | 35.6 | 16.29R | 718 |
| 0029P 0.04 | KC2020 | 10 | 21.89874 | | | | | | | 16.31R | 970 5.8" 0.28-m +/- |
| 0029P | C2020 | 10 | 22.34824 | 02 | 39 | 29.02 | +27 | 17 | 57.4 | 16.27R | 718 5.2" |
| 0029P | C2020 | 10 | 22.34977 | 02 | 39 | 28.97 | +27 | 17 | 57.2 | 16.27R | 718 |
| 0029P | C2020 | 10 | 22.35130 | 02 | 39 | 28.92 | +27 | 17 | 57.1 | 16.31R | 718 |
| 0029P | C2020 | 10 | 22.35283 | 02 | 39 | 28.88 | +27 | 17 | 57.0 | 16.28R | 718 |
| 0029P | C2020 | 10 | 22.35435 | 02 | 39 | 28.83 | +27 | 17 | 56.8 | 16.26R | 718 |
| 0029P | C2020 | 10 | 22.35588 | 02 | 39 | 28.79 | +27 | 17 | 56.6 | 16.32R | 718 |
| 0029P | C2020 | 10 | 22.35741 | 02 | 39 | 28.73 | +27 | 17 | 56.5 | 16.28R | 718 |
| 0029P | C2020 | 10 | 22.35894 | 02 | 39 | 28.69 | +27 | 17 | 56.3 | 16.25R | 718 |
| 0029P | C2020 | 10 | 22.36046 | 02 | 39 | 28.65 | +27 | 17 | 56.2 | 16.33R | 718 |
| 0029P | C2020 | 10 | 22.36199 | 02 | 39 | 28.61 | +27 | 17 | 56.0 | 16.27R | 718 |
| 0029P | C2020 | 10 | 22.55277 | 02 | 39 | 23.10 | +27 | 17 | 40.8 | 16.41R | E10 5.4" 60s r |
| 0029P | C2020 | 10 | 22.55365 | 02 | 39 | 23.09 | +27 | 17 | 40.7 | 16.39R | E10 |
| 0029P | C2020 | 10 | 22.55453 | 02 | 39 | 23.07 | +27 | 17 | 40.5 | 16.39R | E10 |
| 0029P | C2020 | 10 | 22.55542 | 02 | 39 | 23.02 | +27 | 17 | 39.9 | 16.39R | E10 |
| 0029P | C2020 | 10 | 22.55632 | 02 | 39 | 22.99 | +27 | 17 | 40.3 | 16.39R | E10 |
| 0029P | C2020 | 10 | 22.55721 | 02 | 39 | 22.96 | +27 | 17 | 40.5 | 16.41R | E10 |
| 0029P | C2020 | 10 | 22.55454 | 02 | 39 | 23.04 | +27 | 17 | 40.8 | 16.91R | E10 1.8" 5x60s |
| 0029P | C2020 | 10 | 23.18110 | 02 | 39 | 04.82 | +27 | 16 | 40.1 | 16.33R | 718 |
| 0029P | C2020 | 10 | 23.18644 | 02 | 39 | 04.63 | +27 | 16 | 39.8 | 16.31R | 718 5.2" 4x120s |
| 0029P | C2020 | 10 | 23.19178 | 02 | 39 | 04.50 | +27 | 16 | 39.4 | 16.32R | 718 |
| 0029P | KC2020 | 10 | 23.74624 | 02 | 38 | 48.27 | +27 | 15 | 46.4 | 16.30R | C10 6.5" |
| 0029P | KC2020 | 10 | 23.77463 | 02 | 38 | 47.35 | +27 | 15 | 44.0 | 16.28R | C10 |
| 0029P | KC2020 | 10 | 23.80659 | 02 | 38 | 46.40 | +27 | 15 | 40.9 | 16.25R | C10 |
| 0029P | KC2020 | 10 | 23.83875 | 02 | 38 | 45.45 | +27 | 15 | 37.8 | 16.36R | C10 |
| 0029P | C2020 | 10 | 23.81483 | 02 | 38 | 46.11 | +27 | 15 | 39.8 | 16.27R | I81 5.2" |
| 0029P | C2020 | 10 | 23.81625 | 02 | 38 | 46.08 | +27 | 15 | 39.8 | 16.36R | I81 |
| 0029P | C2020 | 10 | 23.81768 | 02 | 38 | 46.00 | +27 | 15 | 39.3 | 16.29R | I81 |
| 0029P | C2020 | 10 | 23.81910 | 02 | 38 | 46.01 | +27 | 15 | 39.3 | 16.30R | I81 |
| 0029P | C2020 | 10 | 23.82053 | 02 | 38 | 45.95 | +27 | 15 | 39.1 | 16.35R | I81 |
| 0029P | C2020 | 10 | 23.83119 | 02 | 38 | 45.63 | +27 | 15 | 38.4 | 16.30R | I81 |
| 0029P | C2020 | 10 | 23.83260 | 02 | 38 | 45.60 | +27 | 15 | 38.1 | 16.28R | I81 |
| 0029P | C2020 | 10 | 23.83400 | 02 | 38 | 45.55 | +27 | 15 | 38.0 | 16.34R | I81 |
| 0029P | C2020 | 10 | 23.83541 | 02 | 38 | 45.51 | +27 | 15 | 37.6 | 16.33R | I81 |
| 0029P | C2020 | 10 | 23.83682 | 02 | 38 | 45.47 | +27 | 15 | 37.6 | 16.39R | I81 |
| 0029P | C2020 | 10 | 23.83822 | 02 | 38 | 45.43 | +27 | 15 | 37.6 | 16.35R | I81 |
| 0029P | C2020 | 10 | 23.83963 | 02 | 38 | 45.41 | +27 | 15 | 37.0 | 16.36R | I81 |
| 0029P | C2020 | 10 | 23.84105 | 02 | 38 | 45.35 | +27 | 15 | 37.1 | 16.31R | I81 |
| 0029P | C2020 | 10 | 23.84247 | 02 | 38 | 45.32 | +27 | 15 | 37.2 | 16.36R | I81 |
| 0029P | C2020 | 10 | 23.84390 | 02 | 38 | 45.28 | +27 | 15 | 37.0 | 16.38R | I81 |
| 0029P | KC2020 | 10 | 23.94947 | | | | | | | 16.37R | 970 |
| 0029P | KC2020 | 10 | 24.01075 | | | | | | | 16.34R | 970 5.8" 0.28-m |
| 0029P | KC2020 | 10 | 24.06748 | | | | | | | 16.36R | 970 |
| 0029P | C2020 | 10 | 24.16751 | 02 | 38 | 35.73 | +27 | 15 | 06.2 | 16.30R | 718 5.2" |
| 0029P | C2020 | 10 | 24.16903 | 02 | 38 | 35.73 | +27 | 15 | 06.0 | 16.30R | 718 |
| 0029P | C2020 | 10 | 24.17056 | 02 | 38 | 35.68 | +27 | 15 | 05.9 | 16.30R | 718 |
| 0029P | C2020 | 10 | 24.17209 | 02 | 38 | 35.64 | +27 | 15 | 06.0 | 16.21R | 718 |
| 0029P | C2020 | 10 | 24.17362 | 02 | 38 | 35.58 | +27 | 15 | 05.2 | 16.25R | 718 |
| 0029P | C2020 | 10 | 24.17514 | 02 | 38 | 35.52 | +27 | 15 | 05.7 | 16.33R | 718 |
| 0029P | C2020 | 10 | 24.17667 | 02 | 38 | 35.49 | +27 | 15 | 05.4 | 16.30R | 718 |
| 0029P | C2020 | 10 | 24.17821 | 02 | 38 | 35.44 | +27 | 15 | 05.1 | 16.30R | 718 |
| 0029P | C2020 | 10 | 24.17973 | 02 | 38 | 35.39 | +27 | 15 | 05.2 | 16.32R | 718 |
| 0029P | C2020 | 10 | 24.18126 | 02 | 38 | 35.32 | +27 | 15 | 04.9 | 16.33R | 718 |
| **mini-outburst at 2020 10 24.75 +/-0.01 16.35R => 16.05R | | | | | | | | | | | |
| 0029P 371s | C2020 | 10 | 24.77167 | 02 | 38 | 17.90 | +27 | 14 | 07.5 | 16.21R | 213 5.4" 0.30-m |
| 0029P | C2020 | 10 | 24.77634 | 02 | 38 | 17.73 | +27 | 14 | 05.7 | 16.23R | 213 |
| 0029P | C2020 | 10 | 24.78082 | 02 | 38 | 17.68 | +27 | 14 | 05.9 | 16.11R | 213 |
| 0029P | C2020 | 10 | 24.78530 | 02 | 38 | 17.46 | +27 | 14 | 05.1 | 15.89R | 213 |
| 0029P | C2020 | 10 | 24.78977 | 02 | 38 | 17.40 | +27 | 14 | 05.1 | 16.01R | 213 |
| 0029P | C2020 | 10 | 24.79427 | 02 | 38 | 17.24 | +27 | 14 | 04.4 | 15.95R | 213 |
| 0029P | C2020 | 10 | 24.79874 | 02 | 38 | 17.06 | +27 | 14 | 03.9 | 16.00R | 213 |
| 0029P | C2020 | 10 | 24.80322 | 02 | 38 | 16.97 | +27 | 14 | 03.8 | 16.09R | 213 |
| 0029P | C2020 | 10 | 24.80788 | 02 | 38 | 16.83 | +27 | 14 | 03.5 | 15.94R | 213 |

| | | | | | | | | | | | |
|--------|--------|----|----------|----|----|-------|-----|----|------|--------|--------------------|
| 0029F | C2020 | 10 | 24.81255 | 02 | 38 | 16.69 | +27 | 14 | 03.0 | 16.00R | 213 |
| 0029F | KC2020 | 10 | 24.77456 | 02 | 38 | 17.81 | +27 | 14 | 05.8 | 16.32N | L27 6.6" 0.20-m |
| 0029F | KC2020 | 10 | 24.79623 | 02 | 38 | 17.21 | +27 | 14 | 03.6 | 16.04N | L27 |
| 0029F | KC2020 | 10 | 24.82105 | 02 | 38 | 16.44 | +27 | 14 | 02.1 | 16.05N | L27 |
| 0029F | KC2020 | 10 | 24.84272 | 02 | 38 | 15.79 | +27 | 13 | 59.6 | 15.99N | L27 |
| 0029F | KC2020 | 10 | 24.86750 | 02 | 38 | 15.05 | +27 | 13 | 57.5 | 15.87N | L27 |
| 0029F | KC2020 | 10 | 24.88916 | 02 | 38 | 14.39 | +27 | 13 | 55.1 | 15.92N | L27 |
| 0029F | KC2020 | 10 | 24.91399 | 02 | 38 | 13.65 | +27 | 13 | 52.7 | 15.91N | L27 |
| 0029F | KC2020 | 10 | 24.93564 | 02 | 38 | 13.00 | +27 | 13 | 50.4 | 15.94N | L27 |
| 0029F | KC2020 | 10 | 24.95689 | 02 | 38 | 12.37 | +27 | 13 | 48.5 | 15.86N | L27 |
| 0029F | C2020 | 10 | 24.92196 | 02 | 38 | 13.38 | +27 | 13 | 51.3 | 16.09R | I81 5.2" 0.35-m |
| 0029F | C2020 | 10 | 24.92337 | 02 | 38 | 13.33 | +27 | 13 | 51.3 | 16.03R | I81 |
| 0029F | C2020 | 10 | 24.92478 | 02 | 38 | 13.30 | +27 | 13 | 51.2 | 16.07R | I81 |
| 0029F | C2020 | 10 | 24.92619 | 02 | 38 | 13.25 | +27 | 13 | 51.0 | 16.11R | I81 |
| 0029F | C2020 | 10 | 24.92759 | 02 | 38 | 13.21 | +27 | 13 | 50.8 | 16.07R | I81 |
| 0029F | C2020 | 10 | 24.92901 | 02 | 38 | 13.16 | +27 | 13 | 50.7 | 16.06R | I81 |
| 0029F | C2020 | 10 | 24.93044 | 02 | 38 | 13.12 | +27 | 13 | 50.6 | 16.03R | I81 |
| 0029F | C2020 | 10 | 24.93186 | 02 | 38 | 13.11 | +27 | 13 | 50.6 | 16.04R | I81 |
| 0029F | C2020 | 10 | 24.93329 | 02 | 38 | 13.03 | +27 | 13 | 50.3 | 16.05R | I81 |
| 0029F | C2020 | 10 | 24.93545 | 02 | 38 | 12.94 | +27 | 13 | 49.5 | 16.05R | I81 |
| 0029F | C2020 | 10 | 24.93685 | 02 | 38 | 12.93 | +27 | 13 | 49.6 | 16.04R | I81 |
| 0029F | C2020 | 10 | 24.93826 | 02 | 38 | 12.86 | +27 | 13 | 49.3 | 16.02R | I81 |
| 0029F | C2020 | 10 | 24.93966 | 02 | 38 | 12.82 | +27 | 13 | 49.7 | 16.05R | I81 |
| 0029F | C2020 | 10 | 24.94107 | 02 | 38 | 12.81 | +27 | 13 | 49.4 | 16.05R | I81 |
| 0029F | C2020 | 10 | 24.94248 | 02 | 38 | 12.76 | +27 | 13 | 49.5 | 16.05R | I81 |
| 0029F | C2020 | 10 | 24.94388 | 02 | 38 | 12.70 | +27 | 13 | 49.5 | 16.05R | I81 |
| 0029F | C2020 | 10 | 24.94529 | 02 | 38 | 12.68 | +27 | 13 | 48.8 | 16.03R | I81 |
| 0029F | C2020 | 10 | 24.94669 | 02 | 38 | 12.69 | +27 | 13 | 48.8 | 16.04R | I81 |
| 0029F | C2020 | 10 | 24.94810 | 02 | 38 | 12.60 | +27 | 13 | 49.1 | 16.08R | I81 |
| 0029F | C2020 | 10 | 24.95049 | 02 | 38 | 12.53 | +27 | 13 | 48.7 | 16.06R | I81 |
| 0029F | C2020 | 10 | 24.95189 | 02 | 38 | 12.48 | +27 | 13 | 48.7 | 16.03R | I81 |
| 0029F | C2020 | 10 | 24.95330 | 02 | 38 | 12.48 | +27 | 13 | 48.1 | 15.99R | I81 |
| 0029F | C2020 | 10 | 24.95472 | 02 | 38 | 12.43 | +27 | 13 | 47.9 | 16.06R | I81 |
| 0029F | C2020 | 10 | 24.95615 | 02 | 38 | 12.37 | +27 | 13 | 47.1 | 16.04R | I81 |
| 0029F | C2020 | 10 | 24.95757 | 02 | 38 | 12.33 | +27 | 13 | 47.9 | 16.04R | I81 |
| 0029F | C2020 | 10 | 24.95900 | 02 | 38 | 12.21 | +27 | 13 | 47.9 | 16.02R | I81 |
| 0029F | C2020 | 10 | 24.96042 | 02 | 38 | 12.19 | +27 | 13 | 47.8 | 16.03R | I81 |
| 0029F | C2020 | 10 | 24.96185 | 02 | 38 | 12.18 | +27 | 13 | 47.5 | 16.08R | I81 |
| 0029F | C2020 | 10 | 24.96328 | 02 | 38 | 12.16 | +27 | 13 | 47.0 | 16.07R | I81 |
| 0029F | C2020 | 10 | 25.37976 | 02 | 37 | 59.81 | +27 | 13 | 06.4 | 16.09R | T04 |
| 0029F | C2020 | 10 | 25.38201 | 02 | 37 | 59.74 | +27 | 13 | 06.2 | 16.04R | T04 5.7" 0.4-m r |
| 180s | | | | | | | | | | | |
| 0029F | C2020 | 10 | 25.38425 | 02 | 37 | 59.67 | +27 | 13 | 06.0 | 16.05R | T04 |
| 0029F | C2020 | 10 | 25.99265 | 02 | 37 | 41.49 | +27 | 12 | 02.1 | 16.04R | I81 |
| 0029F | C2020 | 10 | 25.99407 | 02 | 37 | 41.43 | +27 | 12 | 01.9 | 16.05R | I81 |
| 0029F | C2020 | 10 | 25.99550 | 02 | 37 | 41.41 | +27 | 12 | 01.8 | 15.99R | I81 |
| 0029F | C2020 | 10 | 25.99692 | 02 | 37 | 41.36 | +27 | 12 | 01.7 | 16.02R | I81 |
| 0029F | C2020 | 10 | 25.99835 | 02 | 37 | 41.32 | +27 | 12 | 01.6 | 16.03R | I81 |
| 0029F | C2020 | 10 | 25.99977 | 02 | 37 | 41.27 | +27 | 12 | 01.5 | 16.03R | I81 |
| 0029F | C2020 | 10 | 26.00119 | 02 | 37 | 41.22 | +27 | 12 | 01.2 | 16.09R | I81 |
| 0029F | C2020 | 10 | 26.00269 | 02 | 37 | 41.18 | +27 | 12 | 01.1 | 16.03R | I81 |
| 0029F | C2020 | 10 | 26.00412 | 02 | 37 | 41.15 | +27 | 12 | 01.0 | 16.05R | I81 |
| 0029F | C2020 | 10 | 26.00554 | 02 | 37 | 41.11 | +27 | 12 | 00.7 | 16.02R | I81 |
| 0029F | C2020 | 10 | 26.00697 | 02 | 37 | 41.05 | +27 | 12 | 00.7 | 16.01R | I81 |
| 0029F | C2020 | 10 | 26.00839 | 02 | 37 | 41.02 | +27 | 12 | 00.4 | 16.04R | I81 |
| 0029F | C2020 | 10 | 26.00982 | 02 | 37 | 40.97 | +27 | 12 | 00.4 | 16.03R | I81 |
| 0029F | C2020 | 10 | 26.01124 | 02 | 37 | 40.93 | +27 | 12 | 00.3 | 16.01R | I81 |
| 0029F | C2020 | 10 | 26.01267 | 02 | 37 | 40.87 | +27 | 12 | 00.1 | 16.04R | I81 |
| 0029F | C2020 | 10 | 26.01409 | 02 | 37 | 40.83 | +27 | 11 | 59.8 | 16.02R | I81 |
| 0029F | C2020 | 10 | 26.18638 | 02 | 37 | 35.81 | +27 | 11 | 42.0 | 16.03R | 718 |
| 0029F | C2020 | 10 | 26.18791 | 02 | 37 | 35.76 | +27 | 11 | 41.8 | 16.01R | 718 5.2" near star |
| 0029F | C2020 | 10 | 26.18944 | 02 | 37 | 35.73 | +27 | 11 | 42.0 | 16.07R | 718 |
| 0029F | C2020 | 10 | 26.37967 | 02 | 37 | 29.99 | +27 | 11 | 22.9 | 16.08R | T04 |
| 0029F | C2020 | 10 | 26.38191 | 02 | 37 | 29.91 | +27 | 11 | 22.7 | 16.07R | T04 5.7" |
| 0029F | C2020 | 10 | 26.38417 | 02 | 37 | 29.84 | +27 | 11 | 22.4 | 16.10R | T04 |
| 0029F | KC2020 | 10 | 26.75005 | 02 | 37 | 18.91 | +27 | 10 | 42.4 | 16.03R | J77 |
| 0029F | KC2020 | 10 | 26.75720 | 02 | 37 | 18.71 | +27 | 10 | 41.3 | 16.10R | J77 5.4" 0.35-m r |
| 10x60s | | | | | | | | | | | |
| 0029F | KC2020 | 10 | 26.76568 | 02 | 37 | 18.43 | +27 | 10 | 40.3 | 16.08R | J77 |

| | | | | | | | | | | | | |
|----------------|--------|----|----------|----|----|-------|-----|----|------|--------|-----|-----------------|
| 0029P | KC2020 | 10 | 26.76861 | 02 | 37 | 18.40 | +27 | 10 | 40.5 | 16.05N | L27 | 6.6" |
| 0029P | KC2020 | 10 | 26.81514 | 02 | 37 | 16.98 | +27 | 10 | 35.5 | 15.90N | L27 | |
| 0029P | KC2020 | 10 | 26.86163 | 02 | 37 | 15.53 | +27 | 10 | 31.2 | 15.91N | L27 | |
| 0029P | KC2020 | 10 | 26.90806 | 02 | 37 | 14.18 | +27 | 10 | 26.0 | 16.00N | L27 | |
| 0029P | KC2020 | 10 | 26.95601 | 02 | 37 | 12.72 | +27 | 10 | 20.6 | 15.93N | L27 | |
| 0029P | KC2020 | 10 | 27.00503 | 02 | 37 | 11.24 | +27 | 10 | 15.4 | 15.93N | L27 | |
| 0029P | KC2020 | 10 | 27.05149 | 02 | 37 | 09.81 | +27 | 10 | 10.4 | 15.94N | L27 | |
| 0029P | KC2020 | 10 | 27.09804 | 02 | 37 | 08.40 | +27 | 10 | 05.1 | 15.94N | L27 | |
| 0029P | KC2020 | 10 | 27.14581 | 02 | 37 | 06.90 | +27 | 10 | 00.0 | 15.94N | L27 | |
| 0029P | KC2020 | 10 | 27.19423 | 02 | 37 | 05.46 | +27 | 09 | 54.8 | 15.98N | L27 | |
| 0029P | KC2020 | 10 | 27.21156 | 02 | 37 | 04.97 | +27 | 09 | 52.8 | 16.03N | L27 | |
| 0029P 0.06 | KC2020 | 10 | 26.79214 | | | | | | | 15.96R | 970 | 5.8" 0.28-m +/- |
| 0029P | C2020 | 10 | 27.15538 | 02 | 37 | 06.63 | +27 | 09 | 59.6 | 16.07R | Z10 | |
| 0029P | C2020 | 10 | 27.16007 | 02 | 37 | 06.48 | +27 | 09 | 59.0 | 16.07R | Z10 | 5.5" |
| 0029P | C2020 | 10 | 27.16473 | 02 | 37 | 06.32 | +27 | 09 | 58.4 | 16.09R | Z10 | |
| 0029P | C2020 | 10 | 27.17319 | 02 | 37 | 06.25 | +27 | 09 | 57.2 | 16.11R | 718 | 5.2" |
| 0029P | C2020 | 10 | 27.17624 | 02 | 37 | 06.16 | +27 | 09 | 56.8 | 15.98R | 718 | |
| 0029P | C2020 | 10 | 27.17777 | 02 | 37 | 06.06 | +27 | 09 | 56.8 | 16.06R | 718 | |
| 0029P | C2020 | 10 | 27.17929 | 02 | 37 | 06.06 | +27 | 09 | 56.6 | 16.05R | 718 | |
| 0029P | C2020 | 10 | 27.18082 | 02 | 37 | 06.01 | +27 | 09 | 56.4 | 16.04R | 718 | |
| 0029P | C2020 | 10 | 27.18235 | 02 | 37 | 06.00 | +27 | 09 | 56.3 | 16.03R | 718 | |
| 0029P | C2020 | 10 | 27.18387 | 02 | 37 | 05.88 | +27 | 09 | 55.9 | 16.01R | 718 | |
| 0029P | C2020 | 10 | 27.18540 | 02 | 37 | 05.87 | +27 | 09 | 56.0 | 16.01R | 718 | |
| 0029P | C2020 | 10 | 27.18693 | 02 | 37 | 05.82 | +27 | 09 | 55.8 | 16.06R | 718 | |
| 0029P | C2020 | 10 | 27.18846 | 02 | 37 | 05.78 | +27 | 09 | 55.6 | 16.08R | 718 | |
| 0029P | KC2020 | 10 | 27.76330 | 02 | 36 | 48.58 | +27 | 08 | 52.1 | 15.97N | L27 | |
| 0029P | KC2020 | 10 | 27.80982 | 02 | 36 | 47.11 | +27 | 08 | 47.4 | 15.91N | L27 | 6.6" |
| 0029P | KC2020 | 10 | 27.87437 | 02 | 36 | 45.18 | +27 | 08 | 40.6 | 16.00N | L27 | |
| 0029P | C2020 | 10 | 27.97508 | 02 | 36 | 42.04 | +27 | 08 | 30.6 | 16.09R | L09 | |
| 0029P | C2020 | 10 | 27.97726 | 02 | 36 | 41.96 | +27 | 08 | 31.3 | 16.14R | L09 | 5.7" |
| 0029P | C2020 | 10 | 27.97945 | 02 | 36 | 41.89 | +27 | 08 | 30.9 | 16.08R | L09 | |
| 0029P | KC2020 | 10 | 28.19267 | 02 | 36 | 35.59 | +27 | 08 | 05.0 | 16.01R | 718 | 5.2" 5x120s |
| 0029P | KC2020 | 10 | 28.20031 | 02 | 36 | 35.34 | +27 | 08 | 04.1 | 15.99R | 718 | |
| 0029P | C2020 | 10 | 28.96273 | 02 | 36 | 12.26 | +27 | 06 | 37.2 | 16.09R | I81 | 5.2" |
| 0029P | C2020 | 10 | 28.96414 | 02 | 36 | 12.22 | +27 | 06 | 37.1 | 16.18R | I81 | |
| 0029P | C2020 | 10 | 28.96554 | 02 | 36 | 12.19 | +27 | 06 | 37.1 | 16.04R | I81 | |
| 0029P | C2020 | 10 | 28.96694 | 02 | 36 | 12.14 | +27 | 06 | 36.8 | 16.14R | I81 | |
| 0029P | C2020 | 10 | 28.96836 | 02 | 36 | 12.09 | +27 | 06 | 36.7 | 16.08R | I81 | |
| 0029P | C2020 | 10 | 28.96978 | 02 | 36 | 12.04 | +27 | 06 | 36.4 | 16.18R | I81 | |
| 0029P | C2020 | 10 | 28.97120 | 02 | 36 | 11.96 | +27 | 06 | 36.8 | 16.21R | I81 | |
| 0029P | C2020 | 10 | 28.97263 | 02 | 36 | 11.94 | +27 | 06 | 36.0 | 16.06R | I81 | |
| 0029P | C2020 | 10 | 28.97405 | 02 | 36 | 11.91 | +27 | 06 | 36.1 | 16.10R | I81 | |
| 0029P | C2020 | 10 | 28.97547 | 02 | 36 | 11.87 | +27 | 06 | 36.0 | 16.08R | I81 | |
| 0029P 0.06 | KC2020 | 10 | 29.01779 | | | | | | | 16.10R | 970 | 5.8" 0.28-m +/- |
| 0029P | KC2020 | 10 | 29.16727 | 02 | 36 | 06.12 | +27 | 06 | 13.9 | 16.13R | 718 | 5.2" 5x120s |
| 0029P | KC2020 | 10 | 29.17491 | 02 | 36 | 05.89 | +27 | 06 | 13.4 | 16.11R | 718 | |
| 0029P | C2020 | 10 | 29.58103 | 02 | 35 | 53.54 | +27 | 05 | 28.6 | 16.11R | E10 | 5.4" 2.0-m r |
| 0029P | C2020 | 10 | 29.58192 | 02 | 35 | 53.52 | +27 | 05 | 28.5 | 16.12R | E10 | |
| 0029P | C2020 | 10 | 29.58281 | 02 | 35 | 53.49 | +27 | 05 | 28.4 | 16.20R | E10 | |
| 0029P | C2020 | 10 | 29.58369 | 02 | 35 | 53.46 | +27 | 05 | 28.3 | 16.09R | E10 | |
| 0029P | C2020 | 10 | 29.58458 | 02 | 35 | 53.43 | +27 | 05 | 28.2 | 16.20R | E10 | |
| 0029P | C2020 | 10 | 29.58547 | 02 | 35 | 53.41 | +27 | 05 | 28.1 | 16.12R | E10 | |
| 0029P 0.05 | KC2020 | 10 | 29.91505 | | | | | | | 15.99R | 970 | 5.8" 0.28-m +/- |
| 0029P 30deg | KC2020 | 10 | 29.95107 | | | | | | | 16.05R | 970 | 98% Moon |
| 0029P | C2020 | 10 | 29.94015 | 02 | 35 | 42.70 | +27 | 04 | 44.6 | 16.11R | Z10 | 5.5" |
| 0029P | C2020 | 10 | 29.94481 | 02 | 35 | 42.52 | +27 | 04 | 43.6 | 16.12R | Z10 | |
| 0029P | KC2020 | 10 | 30.17810 | 02 | 35 | 35.51 | +27 | 04 | 16.0 | 16.15R | 718 | 5.2" 5x120s |
| 0029P | KC2020 | 10 | 30.18574 | 02 | 35 | 35.28 | +27 | 04 | 15.1 | 16.11R | 718 | |

| | | | |
|-------------------|--|--------|---------------------|
| 0029P 25deg | C2020 10 30.52297 02 35 25.03 +27 03 37.1 | 16.04R | E10 5.4" 99% Moon |
| 0029P | C2020 10 30.52386 02 35 25.00 +27 03 36.9 | 16.14R | E10 |
| 0029P | C2020 10 30.52475 02 35 24.95 +27 03 37.1 | 16.06R | E10 |
| 0029P | C2020 10 30.52564 02 35 24.94 +27 03 36.9 | 16.17R | E10 |
| 0029P | C2020 10 30.52653 02 35 24.90 +27 03 36.6 | 16.08R | E10 |
| 0029P | C2020 10 30.52742 02 35 24.88 +27 03 36.5 | 16.03R | E10 |
| 0029P | KC2020 10 30.52435 02 35 24.98 +27 03 36.9 | 16.17R | Q58 5.7" 0.4-m |
| 0029P | KC2020 10 30.79501 02 35 16.84 +27 03 01.6 | 15.96N | L27 |
| 0029P | KC2020 10 30.84193 02 35 15.39 +27 02 56.3 | 16.09N | L27 |
| 0029P | KC2020 10 30.88841 02 35 13.96 +27 02 50.7 | 15.99N | L27 6.6" 100% Moon |
| 0029P 21deg | KC2020 10 30.93493 02 35 12.49 +27 02 45.2 | 15.92N | L27 |
| 0029P | KC2020 10 30.99104 02 35 10.79 +27 02 38.8 | 15.95N | L27 |
| 0029P | KC2020 10 31.16867 02 35 05.48 +27 02 16.8 | 16.25R | 718 5.2" 5x120s |
| poor sky 0029P | KC2020 10 31.17631 02 35 05.35 +27 02 16.7 | 16.10R | 718 |
| 0029P | KC2020 10 31.53699 02 34 54.21 +27 01 34.8 | 16.01R | E10 5.4" lower SNR |
| 0029P | KC2020 10 31.53917 02 34 54.14 +27 01 33.7 | 16.09R | E10 |
| 0029P | KC2020 10 31.78769 02 34 46.64 +27 01 00.8 | 15.68N | L27 6.6" 100% Moon |
| 15deg 0029P | KC2020 10 31.83418 02 34 45.22 +27 00 54.6 | 16.00N | L27 |
| 0029P | KC2020 10 31.88073 02 34 43.81 +27 00 49.0 | 16.03N | L27 |
| 0029P | KC2020 10 31.92719 02 34 42.37 +27 00 43.3 | 15.84N | L27 |
| 0029P | KC2020 10 31.97362 02 34 40.93 +27 00 37.3 | 15.80N | L27 |
| 0029P | KC2020 11 01.01880 02 34 39.52 +27 00 31.6 | 15.83N | L27 |
| 0029P | KC2020 11 01.04933 02 34 38.57 +27 00 28.2 | 15.79N | L27 |
| 0029P | KC2020 11 01.19392 02 34 34.27 +27 00 10.3 | 16.02R | 718 5.2" 5x120s |
| 0029P | KC2020 11 01.20156 02 34 34.02 +27 00 09.3 | 16.02R | 718 |
| 0029P | KC2020 11 02.15787 02 34 04.95 +26 58 07.7 | 16.06R | 718 5.2" 5x120s |
| 0029P | KC2020 11 02.16550 02 34 04.69 +26 58 06.8 | 16.10R | 718 |
| 0029P | KC2020 11 02.38194 02 33 58.04 +26 57 39.9 | 16.02R | T04 5.7" |
| 0029P | KC2020 11 02.76926 02 33 46.30 +26 56 48.1 | 16.10R | J77 5.4" 10x60s r |
| filter 0029P | KC2020 11 02.78358 02 33 45.86 +26 56 46.4 | 16.10R | J77 |
| 0029P | KC2020 11 02.79073 02 33 45.67 +26 56 45.8 | 16.08R | J77 |
| 0029P | KC2020 11 02.92367 02 33 41.55 +26 56 29.0 | 16.15R | J77 |
| 0029P | KC2020 11 02.93082 02 33 41.31 +26 56 27.7 | 16.01R | J77 |
| 0029P | KC2020 11 02.93797 02 33 41.09 +26 56 26.9 | 16.06R | J77 |
| 0029P | KC2020 11 02.80464 02 33 45.24 +26 56 43.6 | 15.94N | L27 6.6" |
| 0029P | KC2020 11 02.81331 02 33 44.98 +26 56 42.6 | 15.64N | L27 |
| 0029P | KC2020 11 02.82270 02 33 44.68 +26 56 41.7 | 15.76N | L27 |
| 0029P | KC2020 11 03.27238 02 33 30.92 +26 55 43.1 | 16.15R | 718 |
| 0029P | KC2020 11 03.27544 02 33 30.83 +26 55 42.8 | 16.08R | 718 |
| 0029P | KC2020 11 03.27850 02 33 30.74 +26 55 42.3 | 16.06R | 718 5.2" 2x120s |
| 0029P | KC2020 11 03.28155 02 33 30.65 +26 55 41.9 | 16.09R | 718 |
| 0029P | KC2020 11 03.28461 02 33 30.55 +26 55 41.5 | 16.14R | 718 |
| 0029P | KC2020 11 03.38190 02 33 27.59 +26 55 29.7 | 15.83R | T04 5.7" incl. star |
| 0029P | C2020 11 03.53556 02 33 22.92 +26 55 10.2 | 16.21R | E10 5.4" |
| 0029P | C2020 11 03.53610 02 33 22.91 +26 55 10.3 | 16.17R | E10 |
| 0029P | C2020 11 03.53664 02 33 22.89 +26 55 10.3 | 16.07R | E10 |
| 0029P | C2020 11 03.53718 02 33 22.87 +26 55 10.1 | 16.14R | E10 |
| 0029P | C2020 11 03.53772 02 33 22.86 +26 55 10.2 | 16.14R | E10 |
| 0029P | C2020 11 03.53826 02 33 22.84 +26 55 10.0 | 16.15R | E10 |
| 0029P | C2020 11 03.53880 02 33 22.82 +26 55 10.0 | 16.13R | E10 |
| 0029P | C2020 11 03.53934 02 33 22.80 +26 55 09.8 | 16.19R | E10 |
| 0029P | KC2020 11 03.75490 02 33 16.31 +26 54 38.6 | 16.01R | C10 6.5" |
| 0029P | KC2020 11 03.81540 02 33 14.43 +26 54 30.8 | 15.95R | C10 |
| 0029P | KC2020 11 03.88237 02 33 12.38 +26 54 21.9 | 15.98R | C10 |
| 0029P | KC2020 11 03.95152 02 33 10.21 +26 54 12.7 | 16.12R | C10 |
| 0029P | KC2020 11 04.01531 02 33 08.30 +26 54 04.1 | 16.04R | C10 |
| 0029P | KC2020 11 04.07700 02 33 06.39 +26 53 55.1 | 15.90R | C10 |
| 0029P | KC2020 11 04.14948 02 33 04.17 +26 53 45.8 | 16.11R | C10 |

| | | | | | | | | | | | |
|---|--------|----|----------|----|----|-------|-----|----|------|--------|---------------------|
| 0029P | KC2020 | 11 | 04.19603 | 02 | 33 | 02.71 | +26 | 53 | 39.3 | 16.03R | C10 |
| 0029P | C2020 | 11 | 03.97939 | 02 | 33 | 09.34 | +26 | 54 | 08.6 | 16.12R | I81 5.2" |
| 0029P | C2020 | 11 | 03.98081 | 02 | 33 | 09.33 | +26 | 54 | 08.5 | 16.14R | I81 |
| 0029P | C2020 | 11 | 04.03180 | 02 | 33 | 07.75 | +26 | 54 | 01.8 | 16.34R | I81 |
| 0029P | C2020 | 11 | 04.03323 | 02 | 33 | 07.71 | +26 | 54 | 01.4 | 16.16R | I81 |
| 0029P | C2020 | 11 | 04.03465 | 02 | 33 | 07.66 | +26 | 54 | 01.3 | 16.22R | I81 |
| 0029P | C2020 | 11 | 04.03608 | 02 | 33 | 07.62 | +26 | 54 | 01.2 | 16.22R | I81 |
| 0029P | C2020 | 11 | 04.03750 | 02 | 33 | 07.58 | +26 | 54 | 00.9 | 16.28R | I81 |
| 0029P | C2020 | 11 | 04.03892 | 02 | 33 | 07.53 | +26 | 54 | 00.6 | 16.10R | I81 |
| 0029P | C2020 | 11 | 04.04033 | 02 | 33 | 07.50 | +26 | 54 | 00.6 | 16.13R | I81 |
| 0029P | C2020 | 11 | 04.04173 | 02 | 33 | 07.43 | +26 | 54 | 00.2 | 16.16R | I81 |
| 0029P | C2020 | 11 | 04.04315 | 02 | 33 | 07.41 | +26 | 54 | 00.2 | 16.16R | I81 |
| 0029P | C2020 | 11 | 04.04458 | 02 | 33 | 07.33 | +26 | 53 | 59.7 | 16.23R | I81 |
| 0029P | C2020 | 11 | 04.04600 | 02 | 33 | 07.32 | +26 | 53 | 59.8 | 16.20R | I81 |
| 0029P | C2020 | 11 | 04.04743 | 02 | 33 | 07.25 | +26 | 54 | 00.1 | 16.17R | I81 |
| 0029P | KC2020 | 11 | 04.00707 | | | | | | | 16.18R | 970 5.8" 0.28-m +/- |
| 0.05 | | | | | | | | | | | |
| 0029P | KC2020 | 11 | 04.20029 | 02 | 33 | 02.73 | +26 | 53 | 39.4 | 16.15R | 718 |
| 0029P | KC2020 | 11 | 04.20334 | 02 | 33 | 02.66 | +26 | 53 | 39.2 | 16.14R | 718 |
| 0029P | KC2020 | 11 | 04.20640 | 02 | 33 | 02.56 | +26 | 53 | 38.6 | 16.14R | 718 5.2" 2x120s |
| 0029P | KC2020 | 11 | 04.20946 | 02 | 33 | 02.45 | +26 | 53 | 38.4 | 16.13R | 718 |
| 0029P | KC2020 | 11 | 04.21251 | 02 | 33 | 02.35 | +26 | 53 | 37.9 | 16.18R | 718 |
| 0029P | KC2020 | 11 | 04.73691 | 02 | 32 | 46.43 | +26 | 52 | 26.1 | 16.27R | J77 5.4" 8x60s r |
| filter | | | | | | | | | | | |
| 0029P | KC2020 | 11 | 04.74263 | 02 | 32 | 46.25 | +26 | 52 | 25.2 | 16.21R | J77 |
| 0029P | KC2020 | 11 | 04.74872 | 02 | 32 | 46.05 | +26 | 52 | 24.7 | 16.23R | J77 |
| 0029P | KC2020 | 11 | 04.75113 | 02 | 32 | 46.04 | +26 | 52 | 24.8 | 16.17R | J77 |
| possible event: 2020 11 04.83+/-0.06 16.21R => 16.05R | | | | | | | | | | | |
| 0029P | KC2020 | 11 | 04.84685 | | | | | | | 16.10R | 970 5.8" 0.28-m +/- |
| 0.05 | | | | | | | | | | | |
| 0029P | KC2020 | 11 | 04.90440 | | | | | | | 15.99R | 970 +/- |
| 0.04 | | | | | | | | | | | |
| 0029P | KC2020 | 11 | 04.90160 | 02 | 32 | 41.38 | +26 | 52 | 04.2 | 16.05R | J77 5.4" 8x60s r |
| filter | | | | | | | | | | | |
| 0029P | KC2020 | 11 | 04.90733 | 02 | 32 | 41.20 | +26 | 52 | 03.3 | 16.04R | J77 |
| 0029P | KC2020 | 11 | 04.91305 | 02 | 32 | 41.02 | +26 | 52 | 02.6 | 16.06R | J77 field star |
| 0029P | KC2020 | 11 | 04.91878 | 02 | 32 | 40.85 | +26 | 52 | 01.8 | 16.12R | J77 |
| 0029P | KC2020 | 11 | 04.92450 | 02 | 32 | 40.68 | +26 | 52 | 01.3 | 16.11R | J77 |
| 0029P | KC2020 | 11 | 04.93023 | 02 | 32 | 40.52 | +26 | 52 | 00.2 | 16.07R | J77 |
| 0029P | KC2020 | 11 | 05.02734 | 02 | 32 | 37.50 | +26 | 51 | 47.1 | 16.00R | J77 5.4" 8x60s r |
| filter | | | | | | | | | | | |
| 0029P | KC2020 | 11 | 05.03307 | 02 | 32 | 37.32 | +26 | 51 | 46.4 | 16.08R | J77 |
| 0029P | KC2020 | 11 | 05.03880 | 02 | 32 | 37.14 | +26 | 51 | 45.6 | 16.08R | J77 field star |
| 0029P | KC2020 | 11 | 05.04453 | 02 | 32 | 36.96 | +26 | 51 | 44.8 | 16.05R | J77 |
| 0029P | KC2020 | 11 | 05.05025 | 02 | 32 | 36.80 | +26 | 51 | 44.0 | 16.07R | J77 |
| 0029P | KC2020 | 11 | 04.74134 | 02 | 32 | 46.29 | +26 | 52 | 25.7 | 16.11R | C10 6.5" |
| 0029P | KC2020 | 11 | 04.79049 | 02 | 32 | 44.79 | +26 | 52 | 19.3 | 16.04R | C10 |
| 0029P | KC2020 | 11 | 04.83772 | 02 | 32 | 43.33 | +26 | 52 | 12.7 | 16.08R | C10 |
| 0029P | KC2020 | 11 | 04.88676 | 02 | 32 | 41.84 | +26 | 52 | 06.3 | 16.03R | C10 |
| 0029P | KC2020 | 11 | 04.93448 | 02 | 32 | 40.35 | +26 | 51 | 59.8 | 16.03R | C10 |
| 0029P | KC2020 | 11 | 04.98543 | 02 | 32 | 38.80 | +26 | 51 | 51.9 | 15.89R | C10 nearby star |
| 0029P | KC2020 | 11 | 05.04341 | 02 | 32 | 37.02 | +26 | 51 | 44.7 | 16.02R | C10 |
| 0029P | KC2020 | 11 | 05.09541 | 02 | 32 | 35.39 | +26 | 51 | 37.5 | 16.04R | C10 |
| 0029P | KC2020 | 11 | 05.14453 | 02 | 32 | 33.89 | +26 | 51 | 30.9 | 16.14R | C10 |
| 0029P | KC2020 | 11 | 05.19747 | 02 | 32 | 32.28 | +26 | 51 | 23.1 | 16.22R | C10 |
| 0029P | C2020 | 11 | 05.13323 | 02 | 32 | 34.39 | +26 | 51 | 32.5 | 16.19R | 718 |
| 0029P | C2020 | 11 | 05.13628 | 02 | 32 | 34.29 | +26 | 51 | 32.2 | 16.18R | 718 |
| 0029P | C2020 | 11 | 05.13934 | 02 | 32 | 34.19 | +26 | 51 | 31.9 | 16.24R | 718 5.2" 2x120s |
| 0029P | C2020 | 11 | 05.14240 | 02 | 32 | 34.07 | +26 | 51 | 31.3 | 16.20R | 718 |
| 0029P | C2020 | 11 | 05.14547 | 02 | 32 | 34.04 | +26 | 51 | 30.7 | 16.18R | 718 |
| 0029P | C2020 | 11 | 05.80663 | 02 | 32 | 13.94 | +26 | 49 | 58.2 | 16.22R | I81 5.2" Clear |
| 0029P | C2020 | 11 | 05.80806 | 02 | 32 | 13.86 | +26 | 49 | 58.5 | 16.18R | I81 |
| 0029P | C2020 | 11 | 05.80948 | 02 | 32 | 13.78 | +26 | 49 | 58.9 | 16.22R | I81 |
| 0029P | C2020 | 11 | 05.81091 | 02 | 32 | 13.73 | +26 | 49 | 58.6 | 16.17R | I81 |
| 0029P | C2020 | 11 | 05.81233 | 02 | 32 | 13.70 | +26 | 49 | 58.8 | 16.20R | I81 |
| 0029P | C2020 | 11 | 05.81376 | 02 | 32 | 13.74 | +26 | 49 | 57.6 | 16.21R | I81 |

| | | | | | | | | | | | |
|-----------------|--------|----|----------|----|----|-------|-----|----|------|--------|-------------------|
| 0029P | C2020 | 11 | 05.81518 | 02 | 32 | 13.64 | +26 | 49 | 56.7 | 16.25R | I81 |
| 0029P | C2020 | 11 | 05.81661 | 02 | 32 | 13.58 | +26 | 49 | 57.2 | 16.22R | I81 |
| 0029P | C2020 | 11 | 05.81803 | 02 | 32 | 13.56 | +26 | 49 | 57.2 | 16.23R | I81 |
| 0029P | C2020 | 11 | 05.81946 | 02 | 32 | 13.49 | +26 | 49 | 56.9 | 16.25R | I81 |
| 0029P | C2020 | 11 | 05.82088 | 02 | 32 | 13.46 | +26 | 49 | 56.5 | 16.27R | I81 |
| 0029P | C2020 | 11 | 05.82231 | 02 | 32 | 13.42 | +26 | 49 | 56.5 | 16.17R | I81 |
| 0029P | C2020 | 11 | 05.86365 | 02 | 32 | 12.16 | +26 | 49 | 51.8 | 16.23R | I81 5.2" R filter |
| 0029P | C2020 | 11 | 05.86507 | 02 | 32 | 12.10 | +26 | 49 | 50.9 | 16.20R | I81 |
| 0029P | C2020 | 11 | 05.86649 | 02 | 32 | 12.06 | +26 | 49 | 50.5 | 16.13R | I81 |
| 0029P | C2020 | 11 | 05.86792 | 02 | 32 | 12.06 | +26 | 49 | 50.4 | 16.26R | I81 |
| 0029P | C2020 | 11 | 05.86934 | 02 | 32 | 12.02 | +26 | 49 | 49.8 | 16.24R | I81 |
| 0029P | C2020 | 11 | 05.87077 | 02 | 32 | 11.94 | +26 | 49 | 50.0 | 16.15R | I81 |
| 0029P | C2020 | 11 | 05.87219 | 02 | 32 | 11.87 | +26 | 49 | 49.6 | 16.17R | I81 |
| 0029P | C2020 | 11 | 05.87362 | 02 | 32 | 11.82 | +26 | 49 | 49.8 | 16.18R | I81 |
| 0029P | KC2020 | 11 | 05.74766 | 02 | 32 | 15.75 | +26 | 50 | 07.0 | 16.13R | C10 6.5" |
| 0029P | KC2020 | 11 | 05.79668 | 02 | 32 | 14.24 | +26 | 50 | 00.6 | 16.10R | C10 |
| 0029P | KC2020 | 11 | 05.84577 | 02 | 32 | 12.74 | +26 | 49 | 53.8 | 16.13R | C10 |
| 0029P | KC2020 | 11 | 05.89475 | 02 | 32 | 11.22 | +26 | 49 | 47.4 | 16.13R | C10 |
| 0029P | KC2020 | 11 | 05.94391 | 02 | 32 | 09.72 | +26 | 49 | 40.2 | 16.12R | C10 |
| 0029P | KC2020 | 11 | 05.99758 | 02 | 32 | 08.06 | +26 | 49 | 32.7 | 16.13R | C10 |
| 0029P | KC2020 | 11 | 06.04881 | 02 | 32 | 06.54 | +26 | 49 | 26.1 | 16.12R | C10 |
| 0029P | KC2020 | 11 | 06.10120 | 02 | 32 | 04.87 | +26 | 49 | 18.2 | 16.09R | C10 |
| 0029P | KC2020 | 11 | 06.15145 | 02 | 32 | 03.34 | +26 | 49 | 11.0 | 16.16R | C10 |
| 0029P | KC2020 | 11 | 06.19832 | 02 | 32 | 01.89 | +26 | 49 | 04.3 | 16.14R | C10 |
| 0029P filter | KC2020 | 11 | 05.91751 | 02 | 32 | 10.53 | +26 | 49 | 44.2 | 16.21R | J77 5.4" 8x60s r |
| 0029P | KC2020 | 11 | 05.92324 | 02 | 32 | 10.35 | +26 | 49 | 43.2 | 16.20R | J77 |
| 0029P | KC2020 | 11 | 05.92897 | 02 | 32 | 10.18 | +26 | 49 | 42.8 | 16.25R | J77 |
| 0029P | KC2020 | 11 | 05.93470 | 02 | 32 | 10.00 | +26 | 49 | 41.8 | 16.20R | J77 |
| 0029P | KC2020 | 11 | 05.94043 | 02 | 32 | 09.83 | +26 | 49 | 41.0 | 16.20R | J77 |
| 0029P | KC2020 | 11 | 05.94615 | 02 | 32 | 09.63 | +26 | 49 | 40.2 | 16.20R | J77 |
| 0029P | C2020 | 11 | 06.17804 | 02 | 32 | 02.62 | +26 | 49 | 07.9 | 16.19R | 718 |
| 0029P | C2020 | 11 | 06.18110 | 02 | 32 | 02.56 | +26 | 49 | 07.3 | 16.21R | 718 |
| 0029P | C2020 | 11 | 06.18416 | 02 | 32 | 02.46 | +26 | 49 | 07.1 | 16.26R | 718 5.2" 2x120s |
| 0029P | C2020 | 11 | 06.18721 | 02 | 32 | 02.38 | +26 | 49 | 06.5 | 16.23R | 718 |
| 0029P | C2020 | 11 | 06.19027 | 02 | 32 | 02.28 | +26 | 49 | 06.3 | 16.21R | 718 |
| 0029P | KC2020 | 11 | 06.74533 | 02 | 31 | 45.51 | +26 | 47 | 47.0 | 16.27R | C10 6.5" |
| 0029P | KC2020 | 11 | 06.79446 | 02 | 31 | 44.03 | +26 | 47 | 40.3 | 16.15R | C10 |
| 0029P | KC2020 | 11 | 06.84338 | 02 | 31 | 42.49 | +26 | 47 | 33.4 | 16.12R | C10 |
| 0029P | KC2020 | 11 | 06.89229 | 02 | 31 | 41.01 | +26 | 47 | 26.9 | 16.10R | C10 |
| 0029P | KC2020 | 11 | 06.94120 | 02 | 31 | 39.49 | +26 | 47 | 19.9 | 15.97R | C10 |
| 0029P | KC2020 | 11 | 06.99494 | 02 | 31 | 37.88 | +26 | 47 | 12.0 | 15.99R | C10 |
| 0029P | KC2020 | 11 | 07.04484 | 02 | 31 | 36.30 | +26 | 47 | 04.9 | 16.05R | C10 |
| 0029P | KC2020 | 11 | 07.09492 | 02 | 31 | 34.80 | +26 | 46 | 57.8 | 16.04R | C10 |
| 0029P | KC2020 | 11 | 07.14636 | 02 | 31 | 33.22 | +26 | 46 | 50.2 | 15.97R | C10 |
| 0029P | KC2020 | 11 | 07.17508 | 02 | 31 | 32.30 | +26 | 46 | 45.7 | 16.03R | C10 |
| 0029P filter | C2020 | 11 | 06.76328 | 02 | 31 | 44.93 | +26 | 47 | 44.8 | 16.28R | J77 5.4" 6x60s r |
| 0029P | C2020 | 11 | 06.76757 | 02 | 31 | 44.83 | +26 | 47 | 44.3 | 16.29R | J77 |
| 0029P | C2020 | 11 | 06.77186 | 02 | 31 | 44.68 | +26 | 47 | 43.9 | 16.25R | J77 |
| 0029P | C2020 | 11 | 06.77617 | 02 | 31 | 44.55 | +26 | 47 | 43.2 | 16.29R | J77 |
| 0029P | C2020 | 11 | 06.78476 | 02 | 31 | 44.30 | +26 | 47 | 42.0 | 16.26R | J77 |
| 0029P | C2020 | 11 | 06.78905 | 02 | 31 | 44.17 | +26 | 47 | 41.1 | 16.25R | J77 |
| 0029P | C2020 | 11 | 06.79334 | 02 | 31 | 44.04 | +26 | 47 | 40.7 | 16.26R | J77 |
| 0029P | C2020 | 11 | 06.79764 | 02 | 31 | 43.88 | +26 | 47 | 39.8 | 16.27R | J77 |
| 0029P | C2020 | 11 | 06.80194 | 02 | 31 | 43.77 | +26 | 47 | 39.7 | 16.23R | J77 |
| 0029P | C2020 | 11 | 06.80767 | 02 | 31 | 43.58 | +26 | 47 | 38.8 | 16.25R | J77 |
| 0029P | C2020 | 11 | 06.86742 | 02 | 31 | 41.73 | +26 | 47 | 29.8 | 16.23R | I81 5.2" |
| 0029P | C2020 | 11 | 06.86884 | 02 | 31 | 41.68 | +26 | 47 | 29.7 | 16.22R | I81 |
| 0029P | C2020 | 11 | 06.87027 | 02 | 31 | 41.65 | +26 | 47 | 29.4 | 16.28R | I81 |
| 0029P | C2020 | 11 | 06.87169 | 02 | 31 | 41.61 | +26 | 47 | 29.3 | 16.24R | I81 |
| 0029P | C2020 | 11 | 06.87312 | 02 | 31 | 41.56 | +26 | 47 | 29.0 | 16.26R | I81 |
| 0029P | C2020 | 11 | 06.87454 | 02 | 31 | 41.52 | +26 | 47 | 29.0 | 16.28R | I81 |
| 0029P | C2020 | 11 | 06.87597 | 02 | 31 | 41.47 | +26 | 47 | 28.7 | 16.25R | I81 |
| 0029P | C2020 | 11 | 06.87739 | 02 | 31 | 41.42 | +26 | 47 | 28.5 | 16.26R | I81 |
| 0029P | C2020 | 11 | 06.87882 | 02 | 31 | 41.40 | +26 | 47 | 28.1 | 16.26R | I81 |
| 0029P | C2020 | 11 | 06.88024 | 02 | 31 | 41.34 | +26 | 47 | 28.0 | 16.24R | I81 |
| 0029P | C2020 | 11 | 06.88167 | 02 | 31 | 41.29 | +26 | 47 | 27.8 | 16.26R | I81 |
| 0029P | C2020 | 11 | 06.88309 | 02 | 31 | 41.25 | +26 | 47 | 27.6 | 16.25R | I81 |

| | | | | | | | | | | | | |
|-----------------|--------|----|----------|----|----|-------|-----|----|------|--------|-----|----------------|
| 0029P | KC2020 | 11 | 07.04876 | 02 | 31 | 36.16 | +26 | 47 | 04.4 | 16.13R | 204 | 5.6" |
| 0029P | KC2020 | 11 | 07.13346 | 02 | 31 | 33.57 | +26 | 46 | 52.4 | 16.14R | 204 | |
| 0029P | C2020 | 11 | 07.04777 | 02 | 31 | 36.18 | +26 | 47 | 04.7 | 16.15R | 204 | RM measures |
| 0029P | C2020 | 11 | 07.04817 | 02 | 31 | 36.16 | +26 | 47 | 04.5 | 16.13R | 204 | |
| 0029P | C2020 | 11 | 07.04859 | 02 | 31 | 36.16 | +26 | 47 | 04.5 | 16.14R | 204 | |
| 0029P | C2020 | 11 | 07.04899 | 02 | 31 | 36.15 | +26 | 47 | 04.4 | 16.12R | 204 | |
| 0029P | C2020 | 11 | 07.04940 | 02 | 31 | 36.14 | +26 | 47 | 04.3 | 16.10R | 204 | |
| 0029P | C2020 | 11 | 07.13264 | 02 | 31 | 33.60 | +26 | 46 | 52.3 | 16.10R | 204 | |
| 0029P | C2020 | 11 | 07.13304 | 02 | 31 | 33.58 | +26 | 46 | 52.3 | 16.18R | 204 | |
| 0029P | C2020 | 11 | 07.13346 | 02 | 31 | 33.57 | +26 | 46 | 52.3 | 16.07R | 204 | |
| 0029P | C2020 | 11 | 07.13387 | 02 | 31 | 33.56 | +26 | 46 | 52.2 | 16.13R | 204 | |
| 0029P | C2020 | 11 | 07.13427 | 02 | 31 | 33.55 | +26 | 46 | 52.1 | 16.15R | 204 | |
| 0029P | KC2020 | 11 | 07.74125 | 02 | 31 | 15.40 | +26 | 45 | 24.6 | 16.15R | 204 | 5.6" |
| 0029P | KC2020 | 11 | 07.85185 | 02 | 31 | 12.02 | +26 | 45 | 09.1 | 16.21R | 204 | |
| 0029P | C2020 | 11 | 07.87528 | 02 | 31 | 11.29 | +26 | 45 | 05.4 | 16.28R | I81 | 5.2" |
| 0029P | C2020 | 11 | 07.87670 | 02 | 31 | 11.24 | +26 | 45 | 05.1 | 16.29R | I81 | |
| 0029P | C2020 | 11 | 07.87813 | 02 | 31 | 11.20 | +26 | 45 | 04.9 | 16.29R | I81 | |
| 0029P | C2020 | 11 | 07.87955 | 02 | 31 | 11.16 | +26 | 45 | 04.8 | 16.24R | I81 | |
| 0029P | C2020 | 11 | 07.88098 | 02 | 31 | 11.11 | +26 | 45 | 04.5 | 16.33R | I81 | |
| 0029P | C2020 | 11 | 07.88240 | 02 | 31 | 11.07 | +26 | 45 | 04.3 | 16.30R | I81 | |
| 0029P | C2020 | 11 | 07.88383 | 02 | 31 | 11.02 | +26 | 45 | 04.1 | 16.27R | I81 | |
| 0029P | C2020 | 11 | 07.88525 | 02 | 31 | 10.98 | +26 | 45 | 04.0 | 16.29R | I81 | |
| 0029P | C2020 | 11 | 07.88668 | 02 | 31 | 10.94 | +26 | 45 | 03.7 | 16.28R | I81 | |
| 0029P | C2020 | 11 | 07.88668 | 02 | 31 | 10.94 | +26 | 45 | 03.7 | 16.28R | I81 | |
| 0029P | C2020 | 11 | 07.88810 | 02 | 31 | 10.90 | +26 | 45 | 03.5 | 16.24R | I81 | |
| 0029P | C2020 | 11 | 07.88953 | 02 | 31 | 10.85 | +26 | 45 | 03.3 | 16.29R | I81 | |
| 0029P | C2020 | 11 | 07.89095 | 02 | 31 | 10.81 | +26 | 45 | 03.1 | 16.27R | I81 | |
| 0029P filter | C2020 | 11 | 08.57624 | 02 | 30 | 50.14 | +26 | 43 | 25.9 | 16.34R | E10 | 5.4" 2.0-m r |
| 0029P | C2020 | 11 | 08.57713 | 02 | 30 | 50.09 | +26 | 43 | 25.7 | 16.36R | E10 | |
| 0029P | C2020 | 11 | 08.57801 | 02 | 30 | 50.08 | +26 | 43 | 25.4 | 16.36R | E10 | |
| 0029P | C2020 | 11 | 08.57889 | 02 | 30 | 50.06 | +26 | 43 | 25.3 | 16.36R | E10 | |
| 0029P | KC2020 | 11 | 08.85512 | 02 | 30 | 41.83 | +26 | 42 | 42.7 | 16.15R | 204 | 5.6" |
| 0029P | KC2020 | 11 | 08.93179 | 02 | 30 | 39.47 | +26 | 42 | 31.4 | 16.14R | 204 | |
| 0029P filter | C2020 | 11 | 09.57688 | 02 | 30 | 20.12 | +26 | 40 | 57.9 | 16.23R | E10 | 5.4" 2.0-m r |
| 0029P | C2020 | 11 | 09.57777 | 02 | 30 | 20.09 | +26 | 40 | 58.0 | 16.23R | E10 | |
| 0029P | C2020 | 11 | 09.57865 | 02 | 30 | 20.07 | +26 | 40 | 57.8 | 16.22R | E10 | |
| 0029P | C2020 | 11 | 09.57953 | 02 | 30 | 20.04 | +26 | 40 | 57.5 | 16.23R | E10 | |
| 0029P | C2020 | 11 | 09.89406 | 02 | 30 | 10.65 | +26 | 40 | 07.9 | 16.27R | I81 | 5.2" |
| 0029P | C2020 | 11 | 09.89546 | 02 | 30 | 10.62 | +26 | 40 | 07.7 | 16.19R | I81 | |
| 0029P | C2020 | 11 | 09.92772 | 02 | 30 | 09.65 | +26 | 40 | 02.9 | 16.20R | I81 | |
| 0029P | C2020 | 11 | 09.92915 | 02 | 30 | 09.60 | +26 | 40 | 02.5 | 16.21R | I81 | |
| 0029P | C2020 | 11 | 09.93066 | 02 | 30 | 09.55 | +26 | 40 | 02.3 | 16.13R | I81 | |
| 0029P | C2020 | 11 | 09.93207 | 02 | 30 | 09.50 | +26 | 40 | 02.3 | 16.29R | I81 | |
| 0029P | C2020 | 11 | 09.93347 | 02 | 30 | 09.46 | +26 | 40 | 02.2 | 16.20R | I81 | |
| 0029P cloud | KC2020 | 11 | 09.95687 | 02 | 30 | 08.76 | +26 | 39 | 59.0 | 16.27R | 204 | 5.6" thin high |
| 0029P | KC2020 | 11 | 10.00743 | 02 | 30 | 07.22 | +26 | 39 | 51.5 | 16.37R | 204 | |
| 0029P filter | C2020 | 11 | 10.57605 | 02 | 29 | 50.29 | +26 | 38 | 27.8 | 16.31R | E10 | 5.4" 2.0-m r |
| 0029P | C2020 | 11 | 10.57694 | 02 | 29 | 50.27 | +26 | 38 | 27.6 | 16.31R | E10 | |
| 0029P | C2020 | 11 | 10.57782 | 02 | 29 | 50.23 | +26 | 38 | 27.5 | 16.28R | E10 | |
| 0029P | C2020 | 11 | 10.57870 | 02 | 29 | 50.21 | +26 | 38 | 27.4 | 16.29R | E10 | |
| 0029P | KC2020 | 11 | 10.87603 | 02 | 29 | 41.42 | +26 | 37 | 40.3 | 16.26R | Z10 | |
| 0029P | KC2020 | 11 | 10.88068 | 02 | 29 | 41.27 | +26 | 37 | 39.5 | 16.27R | Z10 | 5.5" |
| 0029P | KC2020 | 11 | 10.88535 | 02 | 29 | 41.13 | +26 | 37 | 38.8 | 16.25R | Z10 | |
| 0029P | KC2020 | 11 | 10.91033 | 02 | 29 | 40.38 | +26 | 37 | 34.9 | 15.91N | L27 | 6.6" |
| 0029P | KC2020 | 11 | 10.95913 | 02 | 29 | 38.91 | +26 | 37 | 27.6 | 16.06N | L27 | |
| 0029P | KC2020 | 11 | 11.00555 | 02 | 29 | 37.52 | +26 | 37 | 20.2 | 16.04N | L27 | |
| 0029P | KC2020 | 11 | 11.05198 | 02 | 29 | 36.12 | +26 | 37 | 13.2 | 16.12N | L27 | |
| 0029P | KC2020 | 11 | 11.09840 | 02 | 29 | 34.71 | +26 | 37 | 05.9 | 16.18N | L27 | |
| 0029P | KC2020 | 11 | 11.14125 | 02 | 29 | 33.43 | +26 | 36 | 59.2 | 16.14N | L27 | |
| 0029P | KC2020 | 11 | 11.16539 | 02 | 29 | 32.69 | +26 | 36 | 55.3 | 16.14N | L27 | |

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