

| LLO IM1, IM2, and IM3 alignment shifts |                |                |                |      |
|----------------------------------------|----------------|----------------|----------------|------|
|                                        | 13-Sep         | 14-Nov         | 25-Nov         |      |
|                                        | alignment diff | alignment diff | alignment diff |      |
| IM1 p                                  | -20.4          | 0.0            | -1.0           | urad |
| IM1 y                                  | -4.6           | 2.4            | -0.9           | urad |
| IM2 p                                  | 1.1            | 6.4            | -2.4           | urad |
| IM2 y                                  | -2.3           | 2.6            | -1.0           | urad |
| IM3 p                                  | 37.1           | -22.6          | 7.1            | urad |
| IM3 y                                  | -0.1           | 0.0            | -0.4           | urad |
|                                        | shaking        | shaking        | shaking        |      |
| IM1 p                                  | 6.5            | 1.1            | 3.3            | mrاد |
| IM1 y                                  | 1.8            | 0.9            | 1.3            | mrاد |
| IM2 p                                  | 2.9            | 0.6            | 1.3            | mrاد |
| IM2 y                                  | 2.6            | 1.3            | 2.3            | mrاد |
| IM3 p                                  | 4.7            | 1.9            | 2.5            | mrاد |
| IM3 y                                  | 2.5            | 1.3            | 1.9            | mrاد |
|                                        |                |                |                |      |
| ISI x                                  | 1.01           | 0.01           | 0.04           | mm   |
| ISI y                                  | 0.78           | 0.01           | 0.06           | mm   |
| ISI z                                  | 1.57           | 0.01           | 0.06           | mm   |
| ISI rx                                 | 0.24           | 0.00           | 0.00           | mrاد |
| ISI ry                                 | 0.19           | 0.00           | 0.00           | mrاد |
| ISI rz                                 | 0.69           | 0.00           |                | mrاد |
|                                        |                |                |                |      |
| start                                  | 1126152540     | 1131479057     | 1132437097     | GPS  |
| stop                                   | 1126177740     | 1131498257     | 1132447397     | GPS  |