## Tjornes Watec All-Sky Images 20131102-20131103



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## Tjornes Watec All－Sky Images 20131102－20131103

| 22:46:40 UN | TJO |  | 2:47:40 UT | TJO |  | 2:48:40 UT | TJO |  | 22:49:40 UT | TJO |  | 22:50:40 UT | TJO |  | 22:51:40 UT | TJO |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| E |  | w E | 。 |  | w E | 。 |  | W E | － |  | W E | E |  | w E | － | w |
| 22:52:52:40 S | -TJÖ |  | $2: 53: 40 \mathrm{UN}_{\mathrm{N}}^{\mathrm{N}}$ | -TJŌ | -22: | $2: 54: 40 \frac{\mathrm{UT}}{\mathrm{~N}}$ | ־ȚJŌ |  | 22:55:40 U | ȚJŌ | -22 | $\text { 22:56:40 } \begin{gathered} S \\ \mathrm{UN}_{\mathrm{N}} \end{gathered}$ | $\uparrow \uparrow \bar{O}$ | $-22$ | S2:57:40 U | $\text { - } \bar{\top} \sqrt{O}$ |
| E |  | W E | 。 |  | W E | 。 |  | W E | － |  | W E | E |  | WE | － | w |
| $\text { 22:58:40 } \begin{gathered} \mathrm{U} \\ \mathrm{~N} \end{gathered}$ |  |  | $2: 59: 40 \underset{\mathrm{UN}}{\mathrm{~N}}$ | ${ }^{\circ} \mathrm{T}, \mathrm{O}$ |  | 3：00：40 ${ }_{\text {U }}^{\text {S }}$ | ${ }^{\circ} \mathrm{T}, \bar{O}$ |  | 3：011：40 ${ }_{\text {U }}^{\text {S }}$ |  |  | 23：02：40 ${ }_{\text {UTV }}^{\text {S }}$ | TJJo |  | $23: 03: 41 \underset{\mathrm{U}}{\mathrm{U}}$ | ${ }^{\circ} \mathrm{T} J \bar{O}$ |
| E |  | w E | 。 |  | w E | 。 |  | w E | － |  | W E | E |  | w E | － | w |
|  | $\text { " } \overline{\mathrm{T}} \mathrm{O}$ |  | $3: 00: 41 \text { U }$ | ${ }^{\circ} \mathrm{T}, \mathrm{O}$ |  | $\stackrel{S}{3: 0 ̄ 6: 41} \frac{\mathrm{UC}}{\mathrm{~N}}$ | -TTJŌ |  | $23: 07: 41 \underset{\mathrm{~N}}{\mathrm{UT}}$ |  |  | 23:00:41 | TTJŌ |  | $23: 00: 41 \underset{\mathrm{U}}{\mathrm{U}}$ | "TJŌ |
| E |  | w E | 。 |  | w E | 。 |  | W E | － |  | W E | E |  | w E | － | w |
| $\text { 23:10:41 } \begin{gathered} S \\ \mathrm{UN}_{\mathrm{N}} \end{gathered}$ | -TJOO |  | $\frac{S}{3: 11: 41 \mathbf{U N}_{N}^{\top}}$ | ${ }^{-1} \mathrm{TJO}$ | $23$ | $\frac{S}{S: 12: 41 ~ U N}$ | 「テŌ |  |  | TJŌ |  | $\begin{gathered} S \\ 23: 14: 41 \underset{N}{U N} \\ \hline 1 \end{gathered}$ | -TTJŌ |  | $\frac{S}{S 3: 15: 41}$ | ‘TJŌ |
| E |  | w E | － |  | w E | － |  | W E | － |  | W E | E |  | w E | － | w |
| $\text { 23:16:41 } \begin{gathered} \mathrm{UN} \\ \mathrm{~N} \end{gathered}$ | ‘TJŌ | $23$ | $3: 17: 41 \underset{\mathrm{~N}}{\mathrm{U}}$ | TTJŌ | 23: | $23: 18: 41 \frac{S}{U_{N}^{\top}}$ | ‘T̄OŌ |  | $\begin{gathered} S \\ 23: 19: 41 \text { UN } \end{gathered}$ |  |  | $\text { 23:20:41 } \frac{S}{\mathrm{UN}}$ | ＇TJŌ |  | S3:21:41 U UN | ‘T̄Ō |
| E |  | w E | 。 |  | w E | － |  | W E | － |  | W E | E |  | w E | － | w |
| S |  |  | S |  |  | S |  |  | S |  |  | S |  |  | S |  |

## Tjornes Watec All-Sky Images 20131102-20131103



## Tjornes Watec All－Sky Images 20131102－20131103

| 23:58:42 UT | TJO | 23:59:42 UT | TJO |  | 0:00:42 UT | TJO |  | 00：01：42 UT | TJO |  | 00:02:42 UT | TJO |  | 0:03:42 UT | TJO |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| E |  | W E |  | W E | － |  | W E | E |  | W E | E |  | w E | － |  |
| 00:04:42 S | $\text { - } \uparrow \sqrt{\top}$ | $\text { -00:00:42 } \begin{gathered} S \\ N \end{gathered}$ | TJO | $00: 1$ | $\frac{S}{0: 06: 42} \frac{U_{N}^{\top}}{N}$ |  | $00$ | $00: 07: 43 \underset{N}{U_{N}^{T}}$ | ־TJŌ | $00$ | $00: 00: 43 \frac{S}{U_{N}^{\top}}$ | TJŌ | $00$ | $00: 009: 43 \text { U }$ | TJOº |
| E |  | W E |  | W E | 。 |  | W E | E |  | W E | E |  | w E | E |  |
| $00: 10: 43 \begin{gathered} S \\ \text { UT } \end{gathered}$ | TJŌ | $\begin{gathered} S \\ -00: 11: 43 \underset{N}{U T} \end{gathered}$ | ${ }^{-1} \mathrm{~T} \mathrm{O}^{-1}$ | 00 | $0: 12: 43{\underset{N}{N}}_{\substack{\top}}$ | ‘TJO゙ |  | $00: \overline{0}: \overline{3}: 43 \underset{N}{\text { UT }}$ |  | $=00$ | $00: 14: 43 \underset{N}{U_{N}^{\top}}$ | TJŌ | $00$ | $0: 15: 43 \begin{gathered} S \\ \mathrm{UN}_{\mathrm{N}}^{\top} \end{gathered}$ | "TJŌ |
| E |  | w E |  | w E | － |  | W E | E |  | W E | E |  | w E | － |  |
| $00: 16: 43 \text { S }$ | 'TJÓ | $00: 17: 43 \text { S } \underset{N}{\mathrm{U}}$ | ＇TJȮ |  | $\text { N0:18:43 } \underset{\substack{\mathrm{U} \\ \mathrm{~N}}}{\mathrm{~T}}$ |  |  | $00: 19: 43 \underset{\mathrm{~N}}{\mathrm{UT}}$ | "TJŌ |  | $00: 20: 43 \underset{\mathrm{~N}}{\mathrm{UT}}$ | 'TJO' |  | $00: 21: 43 \underset{N}{U}$ | TJOC |
| E |  | WE |  | w E | 。 |  | W E | E |  | WE | E |  | w E | － |  |
| $00: 22: 43 \underset{N}{S}$ | TJŌ | $00: 23: 43 \text { S }$ | -TJO | $00$ | $\text { 0i:24:43 } \begin{gathered} S \\ \underset{N}{T} \\ \hline \end{gathered}$ | "TJÖ |  | $00: 2 \overline{25: 43} \underset{\mathrm{~N}}{\mathrm{UT}}$ | ＇TJō | $500$ | $00: 2 \overline{6}: 43 \underset{\mathrm{~N}}{\mathrm{UT}}$ | TJŌ | 00 | $00: 27: 43 \underset{\sim}{U}$ | TJÖ |
| E |  | W E |  | w E | － |  | W E | E |  | W E | E |  | w E | － |  |
| $00: 28: 43 \underset{N}{\text { UTN }}$ | TJO | $-00: 29: 43 \underset{N}{\text { UTN }}$ | "TJŌ | $00$ | $0: 30: 43{\underset{N}{N}}_{\substack{T}}^{s}$ | TJO |  | $00: 3 \overline{31: 43} \underset{\mathrm{~N}}{\mathrm{UT}}$ | "TJŌ | $=00$ | $00: 3 \overline{2: 43} \underset{\mathrm{~N}}{\mathrm{UN}}$ | TJȮ |  | $00: 333: 43 \text { S }$ | TJŌ |
| E |  | W E |  | W E | － |  | W E | E |  | W E | E |  | W E | － |  |

## Tjornes Watec All-Sky Images 20131102-20131103



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## Tjornes Watec All-Sky Images 20131102-20131103



## Tjornes Watec All-Sky Images 20131102-20131103

| 03:34:49 UT | TJO | 03:35:49 UT | TJO |  | 03:36:49 UT |  |  | 3:37:49 UT | TJO | 03 | 03:38:49 UT | TJO |  | 03:39:49 UT | TJO |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| E |  | w E |  | W E | E |  | w E | E |  | w E | E |  | w E | E | w |
| $03: 40: 49 \underset{\mathrm{~N}}{\mathrm{~N}}$ | TJŌ | $03: 41: 49 \mathrm{UN}_{\mathrm{N}}^{\mathrm{N}}$ | ${ }^{-} \mathrm{T} J{ }^{-}$ | $03$ | $03: 42: 49 \underset{\mathrm{~N}}{\mathrm{UT}}$ | "TJÖ |  | $03: 43: 49 \underset{N}{\text { UT }}$ | $\text { - } \uparrow$ | $03$ | $03: 44: 49 \underset{\mathrm{~N}}{\mathrm{~N}}$ | "TJŌ | $03$ | $03: \overline{4} 5: 49 \underset{\mathrm{~N}}{\mathrm{UT}}$ | "TJŌ |
| E 0 |  | W E |  | W E | E |  | W E | E |  | W E | E |  | W E | E | w |
| $\text { 03:46:49 } \begin{gathered} S \\ \mathrm{NT} \end{gathered}$ | TJŌ | $03: 47: 49 \mathrm{UN}_{\mathrm{N}}^{\mathrm{N}}$ | "TJŌ | $03$ | $03: 48: 49 \underset{\mathrm{~N}}{\mathrm{UT}}$ | "TJŌ |  | $03: 49: 49 \underset{N}{\text { UT }}$ | "TJŌ |  | $03: 50: 49 \underset{\mathrm{~N}}{\mathrm{~N}}$ | "TJŌ | $03$ | $03: 51: 49 \underset{\mathrm{~N}}{\mathrm{U} T}$ | TJŌ |
| E 0 |  | W E |  | W E | E |  | W E | E |  | W E | E |  | W E | E | w |
| $\text { 03:50:49 } \begin{gathered} \mathrm{UNT} \\ \mathrm{~N} \end{gathered}$ | TJŌ | $\begin{gathered} S \\ \hdashline 03: 53: 49 \underset{N}{U} T \end{gathered}$ | "TJŌ | $03$ | $\stackrel{S}{\text { O3:54:49 UT }}$ | ‘TJŌ |  | $03: 55: 49{\underset{N}{N}}^{S}$ | TJŌ | $03$ | $03: 56: 49 \underset{\mathrm{~N}}{\mathrm{~N}}$ | $\text { " } \overline{\mathrm{T}} \overline{\mathrm{O}}$ | $03$ | $\stackrel{S}{S}$ | "〒 |
| E 0 |  | W E |  | W E | E |  | W E | E |  | W E | E |  | w E | E | w |
| 03:58:50 S | ${ }^{\mathrm{T}} \mathrm{~J} \overline{\mathrm{O}}$ | $\begin{gathered} S \\ -03: 59: 50 \frac{\mathrm{UN}}{\mathrm{~N}} \end{gathered}$ | ${ }^{-} \mathrm{T}, \bar{O}$ | $04$ | $04: 000: 50 \mathrm{U}_{\mathrm{N}}^{\mathrm{N}}$ | ${ }^{\top} \mathrm{T}, \bar{O}$ |  | $\text { 04:0̄1:50 } \frac{S}{\text { UT }}$ | $\text { - } \uparrow \bar{O}$ |  | $\frac{S}{04: 02: 50} \frac{S}{\mathrm{U}}$ | $\bar{T} J \bar{O}$ | $04$ | $04: 003: 50{\underset{N}{N}}_{\substack{T}}^{S}$ | $\text { " } \bar{\top}$ |
| E |  | W E |  | W E | E |  | w E | E |  | W E | E |  | W E | E | w |
| $\text { 04:004:50 } \begin{gathered} \mathrm{UNT} \\ \mathrm{~N} \end{gathered}$ | $\bar{T} J$ | 04:05:50 S | ${ }^{-} \mathrm{T}, \bar{O}$ | $04$ | $04: 006: 50 \underset{\mathrm{~N}}{\mathrm{UT}}$ | - †Jō |  | $\text { 04:07:50 } \underset{\sim}{\text { UT }}$ | $\text { " } \ddagger$ |  | $\text { 04:008:50 } \underset{\mathrm{N}}{\mathrm{~N}}$ | TJŌ | ${ }^{-04}$ | $04: 09: 50 \underset{\mathrm{~N}}{\mathrm{UT}}$ | TJO |
| E 0 |  | W E |  | W E | E |  | W E | E |  | W E | E |  | W E | E | w |

## Tjornes Watec All-Sky Images 20131102-20131103



## Tjornes Watec All-Sky Images 20131102-20131103



## Tjornes Watec All－Sky Images 20131102－20131103

| 05：22：52 UT | TJO | 05：23：52 UT | TJO |  | 05：24：52 UT | TJO |  | 05:25:52 UT | TJO | 05 | $05: 26: 52 \mathrm{UN}_{\mathrm{N}}$ | TJO | $05$ | 05:27:52 UT | TJO |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| E |  | w E |  | w E | E |  | w E | E |  | w E | E |  | W E | E | w |
| $\text { 05:20:5:52 } \begin{gathered} \mathrm{U} \\ \mathrm{~N} \end{gathered}$ | $\bar{T} \mathrm{TO}$ | $-05: 29: 52 \underset{\mathrm{~N}}{\mathrm{U}}$ | "TJŌ | $05$ | $05: 30: 52 \underset{\mathrm{~N}}{\mathrm{UT}}$ | TアŌ |  | $0 \overline{5}: 31: 51: \frac{S}{U_{N}^{\top}}$ | ${ }^{T} \mathrm{~T} \mathrm{O}^{-}$ | $-05$ | $0 \overline{5}: 3 \overline{3} 2: 52 \underset{\mathrm{U}}{\mathrm{U}}$ | ${ }^{-1}$ | $-05$ | $0 \hat{5}: \overline{3} 3: 52 \underset{\mathrm{UN}}{\mathrm{UN}}$ | "TJŌ |
| E |  | W E |  | w E | E |  | W E | E |  | W E | E |  | W E | E | w |
| $05: 34: 52 \mathrm{C}$ | TJÕ | $-05: 35: 52 \underset{N}{S}$ | ‘T̄Ō | $05$ |  | -TJŌ |  | $05: 37: 52{\underset{N}{U N}}_{S}^{U T}$ | 〒TJ̄ |  | $05: 3 \overline{0}: 53 \underset{N}{U_{N}^{T}}$ | TTJŌ | $05$ | $05: 39: 53 \underset{N}{U_{N}^{T}}$ | "TJŌ |
| E 0 |  | W E |  | W E | E |  | W E | E |  | W E | E |  | W E | E | w |
| $05: 40: 53 \begin{gathered} S \\ \mathrm{UN} \end{gathered}$ | $\overline{\mathrm{T}} \mathrm{J}^{-}$ | $-05: 41: 53 \frac{S}{\mathrm{UN}_{\mathrm{N}}^{\top}}$ | ‘TJŌ | $-05$ |  | - TJŌ |  | $5 \overline{5}: 43: 53 \underset{N}{S}$ | ${ }^{-} \mathrm{T} J \mathrm{O} \overline{ }$ |  | $05: 44: 53 \frac{S}{U_{N}^{\top}}$ | TJO | $05$ | $05: 45: 53 \underset{N}{U_{N}^{T}}$ | "TJŌ |
| E 0 |  | W E |  | W E | E |  | W E | E |  | W E | E |  | W E | E | w |
| $05: 46: 53 \begin{gathered} S \\ \mathrm{UT} \end{gathered}$ | $\bar{T} J{ }^{\circ}$ | $-05: 47: 53 \frac{S}{\mathrm{UN}_{N}^{\top}}$ | 「TJÖ | $05$ |  | -TJŌ |  | $05: 49: 53 \frac{S}{U_{N}^{\top}}$ | -TJŌ |  | $05: 50: 53 \frac{S}{U_{N}^{\top}}$ | ${ }^{-1} T J O ̄$ | $-05$ |  | $\bar{T} J{ }^{-}$ |
| E |  | w E |  | w E | E |  | w E | E |  | W E | E |  | W E | E | w |
| $\text { 05:52:53 } \begin{gathered} \mathrm{U} \\ \mathrm{~N} \end{gathered}$ | TJŌ | $-05: 53: 53 \underset{\mathrm{NT}}{\mathrm{~N}}$ | ‘TJŌ | $05$ | $05: 54: 53 \underset{\mathrm{~N}}{\mathrm{UT}}$ | -TJŌ |  | $05: 55: 53 \underset{\mathrm{~N}}{\mathrm{UT}}$ | "T̄Jō |  | $0 \overline{5}: 56: 53 \underset{\mathrm{~N}}{\mathrm{U}}$ | $\stackrel{T}{\top} \bar{O}$ | $-05$ | $05: 57: 53 \underset{\mathrm{~N}}{\mathrm{UT}}$ | $\bar{T} J \bar{O}$ |
| E 0 |  | W E |  | w E | E |  | W E | E |  | W E | E |  | W E | E | w |

## Tjornes Watec All-Sky Images 20131102-20131103



## Tjornes Watec All-Sky Images 20131102-20131103



