



Near Earth Networks Services

# TLRS-4 Deployment to Maui, Hawaii

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# Abstract

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With the completion of the TLRS-4 Operational Readiness Review, Honeywell Technology Solutions Inc (HTSI) working with the University of Hawaii Institute for Astronomy, deployed the NASA TLRS-4 system to the 10,000 foot summit of the Haleakala volcano on September 7th, 2006. TLRS-4 is returning a critical data point to the ILRS Global solution following the closure of the HOLLAS SLR station in 2004. This paper describes the planning, deployment, current status and future at the Haleakala Observatory.



# Background

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- TLRs-4 was returned to operations during spring and summer of 2005.
- A highly successful intercomparison test with Moblas 7 validated that TLRs-4 was ready for deployment
- Following the Operational Readiness Review on September 15, 2005, TLRs-4 was readied for deployment to the 10,000 ft summit of the Haleakala volcano on Maui, Hawaii.

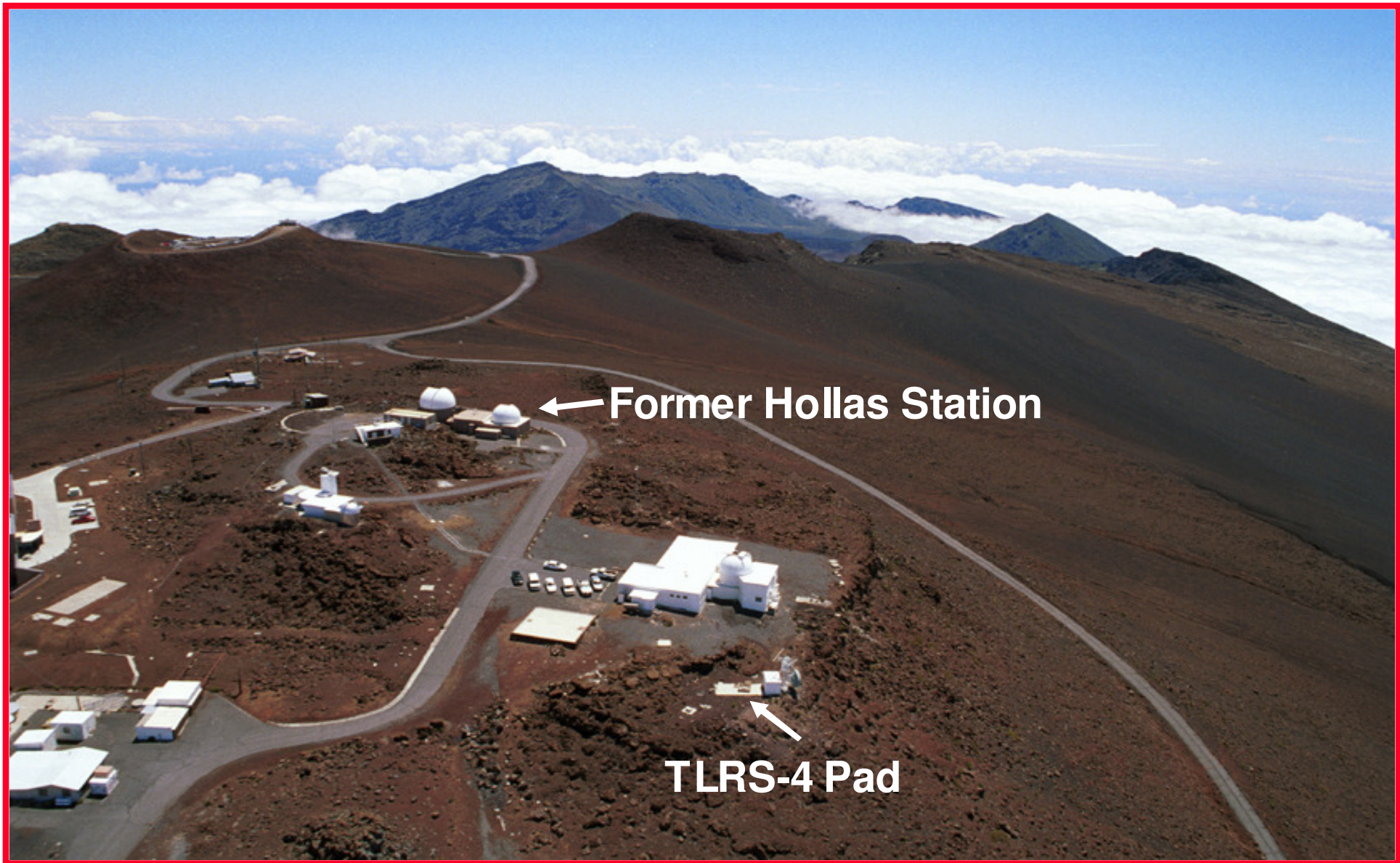






# Haleakala Observatories, Maui Summit

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← Former Hollas Station

TLRS-4 Pad





# Preparing for the Deployment

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- **Site Preparations**

- Hollas site not available for TLRS-4, so a new pad was found
- Infrastructure to be considered included:
  - ◆ Pad
  - ◆ Power
  - ◆ Grounding
  - ◆ Communications – voice & data
  - ◆ Calibration Piers – 2 locations
  - ◆ Site Safety
  - ◆ Survey



- **Coordination with the University of Hawaii (UofH), Institute for Astronomy (IfA) for all efforts despite no contract between IfA and NASA**



# Preparing for the Deployment (2)

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- System operated at GSFC prior to NASA / IfA Contract
  - Dome safety retrofit project occurred
  - Upgraded to 4 pps tracking to support high altitude satellites
- Shipment of the system from GSFC occurred on April 19, 2006 in anticipation of imminent contract signing
- System arrived on Maui on May 25, 2006
  - Since no occupation permit in place for summit, system located at the IfA offices in Waiakoa
  - Permit was received in mid-August for system occupation and site modifications
- Once the permit was received site modifications began and system moved to the summit







# Preparing System at IfA Waiakoa Office

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# Installation of Radar Platform

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# System Arriving at Haleakala Summit

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# TLRS-4 Pad at the Summit

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# TLRS-4 Post Installation

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Jake Kamibayashi,  
IfA TLRS-4 operator

Maceo Blount,  
NENS Installation Engineer

2006/09/07





# TLRS-4 and the Calibration Piers

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# TLRS-4 Summit View from 10,000 feet

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# Current Status and Future Plans

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- **Current Status**

- Station setup complete
- Optical alignments and star calibration performed
- Currently awaiting components to repair laser
- Received vendor quotes for site power installation

- **Remaining Efforts / Future Plans**

- Complete System Operational Verification Tests (SOVT)
- Ground Calibration
- Satellite Tracking
- Validation of Data
- Continue training of IfA crew
- Provide survey report to CDDIS
- Update Site Log
- Complete communications tie-in
- Install primary power
- Remove temporary generator







# Mahalo!

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