POSITION DESCRIPTION

<table>
<thead>
<tr>
<th>Position Title:</th>
<th>Optics Technician</th>
<th>Department:</th>
<th>Operations and Infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incumbent:</td>
<td>vacant</td>
<td>FLSA Status:</td>
<td>Non-Exempt</td>
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<tr>
<td>Reports To:</td>
<td>Instrument and Optics Supervisor</td>
<td>Job Code:</td>
<td></td>
</tr>
<tr>
<td>Supervises:</td>
<td>N/A</td>
<td>Date:</td>
<td>September 18, 2014</td>
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Summary
Under the general supervision of the Instrument & Optics Supervisor, this position is responsible for the maintenance and improvement work on all optical systems. Specific responsibilities include handling of large optics, stripping and coating of optics, participation in glass safety and perform glass safety officer duties for segment exchanges, cleaning and repair of optical elements, and participation in efforts to improve throughput, reduce emissivity and reduce scatter.

Essential Functions
- Performs the safe handling of all large optics including removal from the telescopes, delivery to the optical laboratory, storage and handling within the laboratories, and reinstallation into the telescopes. This includes all 84 primary mirror segments, two secondary mirrors, and two tertiary mirrors.
- Maintains high throughput, low emissivity, and low scatter optical performance of large telescope optics through these activities:
  - Performs large optics recoating, including stripping/cleaning, coating, quality assurance of coatings.
  - Performs CO2 cleaning of large optics.
  - Participates in primary mirror segment exchange.
  - Maintains the coating and mirror storage facilities.
- Supports the efforts to improve throughput, reduce emissivity and reduce scatter of large telescope optics through these activities:
  - Maintains a database of performance history for all large optics.
  - Monitors and acquires optical performance data for large telescope optics.
  - Supports the development of improvements to the bare aluminum cleaning and coating processes.
- Supports tasks necessary to maintain the image quality of the telescopes. Supports static and dynamic optical alignments of telescope optics. Performs warping of segments. Maintains optics support systems, such as whiffletrees and subcells. Maintains capacitive edge sensors.
- Participates in the assessment and development of repair techniques for microcracking in large optics. This includes photographic surveys of the mirrors. Performs repairs in the prescribed manner.
- Participates in the maintenance of reflective and refractive optical components within facility class instrumentation including cleaning and re-coating of optics.
- Collaborate with safety personnel to ensure the safe handling and storage of chemicals used in optics work, particularly mercury and acids.
- Participate in the development of a predictive and preventative maintenance program for all summit optical•systems. Once maintenance program is in place, ensure the long term use of this system to enhance optical performance.
- Keep supervisor informed of progress, problems and concerns related to the observatory; provide status reports as required.

Additional Responsibilities
- Support the development and/or implementation of advanced surfaces such as ion beam coatings, multi-layer overcoated optics, anti-reflectance coatings, etc.
- Under the guidance of the supervisor and the Summit Lead, collaborate with other summit technicians to create an efficient, effective and unified work environment based on the principles of teamwork and mutual responsibility for shared objectives.
- Drive WMKO vehicles as necessary to transport employees to and from the summit in a safe manner.
• Remove snow and ice as required to make the facility accessible, operational and safe.
• Perform other duties consistent with the scope of this position.

Required Qualifications
• Associates Degree or an equivalent combination of experience and training.
• Three (3) years’ experience working with and around optics, including stripping and coating.

Preferred Qualifications
• Expertise in the use of large coating facilities to apply thin-film bare aluminum coatings.
• Previous experience working at an astronomical observatory.
• Hands-on expertise in instrument optical elements such as diffraction gratings, grisms and filters.

Skills
• Microsoft Office Proficiency.
• Expertise in the use of large coating facilities to apply thin-film bare aluminum coatings.
• Expertise in the safe handling of large optics.
• Ability to work independently and as part of a team.
• Computer literacy sufficient to use necessary office productivity tools such as database, spreadsheets, word processing and email.
• Ability to write standard operating procedures for optics maintenance.
• Ability to skillfully and efficiently operate digital SLR cameras for optical photo surveys.
• Ability to technically supervise the work of other technicians.
• Motivated, self-starter who can manage multiple projects and priorities within a fast paced environment.

Certificates and Licenses
• Valid driver’s license and clean abstract.

Competences
To perform the job successfully, an individual should demonstrate the following competencies:
• Communication: Ability to communicate effectively and concisely at all levels.
• Interpersonal skills: Ability to build collaborative, effective relationships with staff.
• Professionalism: Approaches others in a tactful manner; reacts well under pressure; treats others with respect and consideration; accepts responsibility for own actions; follows through on commitments.

Other Requirements
• Willingness to commit to WMKO core values: Safety, Integrity, Respect, Discovery and Service.
• Willingness to commit to WMKO cultural values: Education/Learning, Communication, Teamwork, Rewarding Work Environment, Excellence, Community Involvement.
• Willingness and ability to occasionally work nights and weekends.

Physical Demands
These physical demands are representative of the physical requirements necessary for an employee to successfully perform the essential functions of the job. This is not a complete list of the physical demands that may be required.
• Standing: Remaining on one’s feet in an upright position at a workstation without moving about.
• Walking: Moving about on foot.
• Lifting: Raising or lowering an object from one level to another (includes upward pulling) up to 50 pounds.
• Vision: Color vision - Ability to identify and distinguish colors.
• Hearing: Perceiving the nature of sounds at normal speaking levels with or without correction, and having the ability to receive detailed information through oral communication, and making fine discriminations in sound.
• Carrying: Transporting an object, usually holding it in the hands or arms, or on the shoulder.
• Pushing: Exerting force upon an object so that the object moves away from the force (includes slapping, striking, kicking and treadle actions).
• Pulling: Exerting force upon an object so that the object moves toward the force (includes jerking).
• Climbing: Ascending or descending ladders, stairs, scaffolding, ramps, poles using feet and legs or hands and arms. Body agility is emphasized.
- **Balancing**: Maintaining body equilibrium to prevent falling when walking, standing, crouching, or running on narrow, slippery, or erratically moving surfaces.
- **Stooping**: Bending body downward and forward by bending spine at the waist, requiring full use of the lower extremities and back muscles.
- **Handling**: Seizing, holding, grasping, turning, or otherwise working with hand or hands. Fingers are involved only to the extent that they are an extension of the hand, such as to turn a switch or shift automobile gears.
- Ability to pass a high altitude physical.
- Ability to work at the Observatory (14,000 feet elevation).

**Environmental Conditions**

These environmental conditions are representative of what an employee will encounter while performing the essential functions of the job. This is *not* a complete list of the environmental conditions that may be encountered.

- **Exposure to weather**: Subject to extreme cold. Temperatures can be below 32 degrees for periods of more than one hour. Consideration should be given to the effect of other environmental conditions such as wind and humidity.
- **Subject to Noise**: There is sufficient noise to cause the worker to shout in order to be heard above the ambient noise level.
- **Subject to Hazards**: Moving mechanical parts.
- **Subject to constrained spaces**: Required to function in narrow aisles or passageways.

The above information on this job description has been designed to indicate the general nature and level of work performed by an employee in this classification. It is not to be interpreted as a comprehensive inventory, or all duties, responsibilities, and qualifications of employees assigned to this job. Management has the right to add to, revise, or delete information in this description. Reasonable accommodations will be made to enable qualified individuals with disabilities to perform the essential functions of this position.

<table>
<thead>
<tr>
<th>Incumbent</th>
<th>Date</th>
<th>Supervisor</th>
<th>Date</th>
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A copy of the current Position Description with both employee and supervisor signatures is to be kept on file in the Human Resources office.