Wide-field Infrared Survey Explorer (WISE)

Archive Preparation and Transfer Procedures

Version 0.5

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Revision History

| Date	Version	Author	Description
04-Sept-2009	Version 0.5	Lin Yan	Initial Draft

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1 INTRODUCTION

This document describes the procedure with which the WISE data product will be loaded into the archive database. The mission requirement is that within 1 week of receiving the raw data at IPAC, the WISE archive will deliver the data product, including the source catalogs and reduced images to the science team. Therefore, the WISE archive will need to load new datasets every 3 days, i.e., loading frequency of twice a week.

2 FLOW CHART FOR THE ARCHIVE LOAD AND TRANSFER PROCEDURE

We visually illustrate the archive data loading and transferring procedure with the flow chart below. We summarize the data loading procedures as follows.

1. When the raw data comes down WSDC, it will be ingested and processed through the WISE pipeline.
2. The WISE QA team will exam and validate the processed data and inform the WISE operation team when the data is ready for loading.
3. The WISE OPS team will then prepare the source tables and stage the data for IRSA loading. Fits images will be copied from the WISE server to the IRSA machine
4. Starting from this point, IRSA team takes over and is responsible to load the source tables into the database. The current plan on how the data will be loaded is following, and Figure 3 shows the database organization chart:
   a. The full source catalog database will be organized into individual segments, and the data from each loading forms one segment. Each segment database will be tagged in such a way that it can be easily traced if this segment of the database needs to be replaces
   b. Each database segment can be viewed by designated people. When the new set of data is being loaded every 3 days, this new database segment
5. After the new dataset is loaded, the WISE QA team and the external (outside WSDC) WISE science team will be able to view the newly loaded immediately. If no problems have been identified, the newly loaded dataset will be automatically a part of the full archive. If problems are found, the IRSA team will be alerted and the newly loaded dataset will be removed from the access. Both WISE archive and QA team will work together with the IRSA team to identify the nature of the problems and re-load the archive with the correct dataset. Figure 2 shows the flow chart how the WISE QA team will interact with various groups to validate the newly loaded WISE data and keep track of any anomalies.
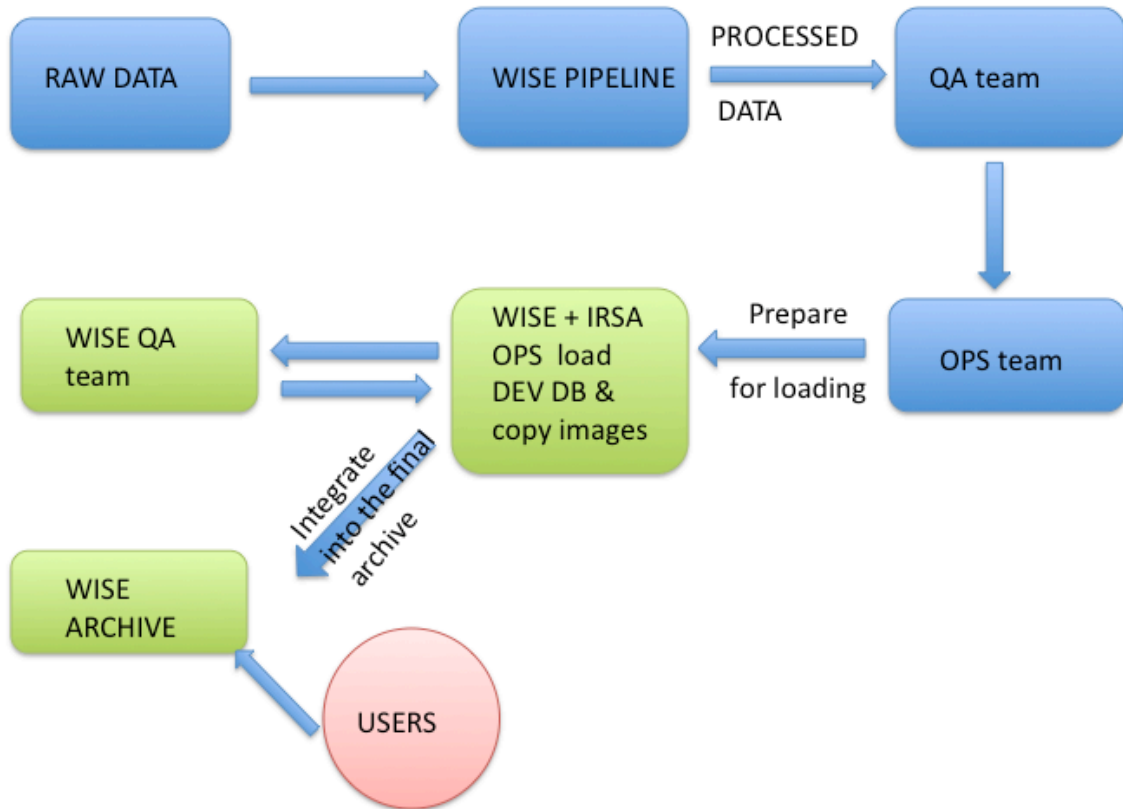
ARCHIVE QA
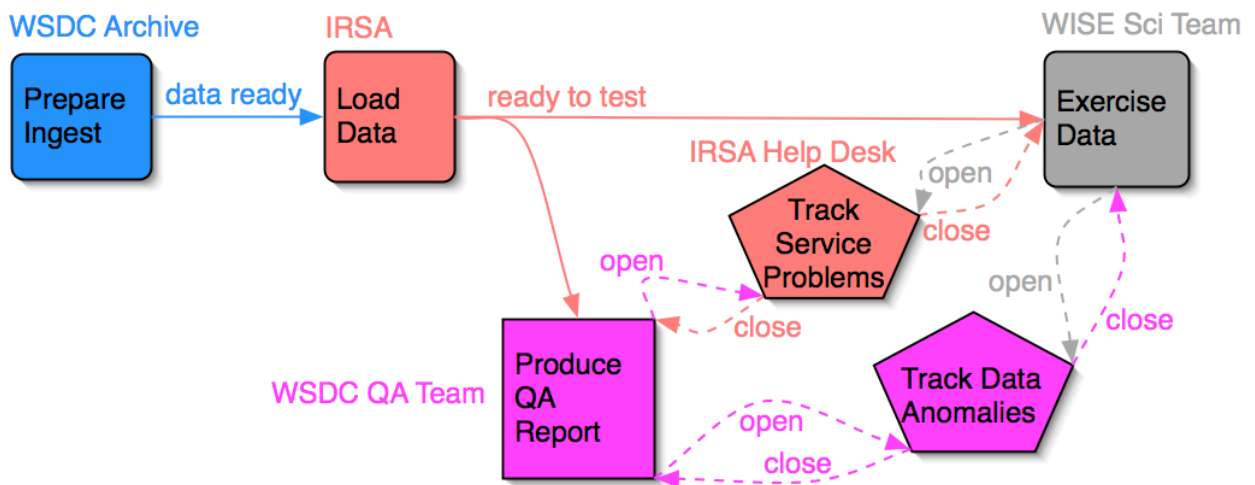
3   TIMING REQUIREMENT FOR ARCHIVE LOAD

Because the archive needs to load twice a week, we need to make sure that for each loading, we can complete all tasks within a turn-around time of 3 days. Here is the summary of the time estimates for each task shown in Figure 1.

1. IRSA database (GATOR) loading time: We have tested the speed of database loading. To load 66 million rows of source tables, it took only 4 hours to complete. This size table corresponds to 30 orbits of single frame data, about 2 days worth of data.
2. Fits image transfer: Assuming a data rate of 12MB/second, to copy all of the fits images, including single frames and coadded images from the WISE computer servers, to the IRSA computer disks, it will take about 6hrs. This could be an over-estimate of the time since the data transfer rate can be as high as XXXX.
3.

5   SUMMARY