## 表结构

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| --- | --- |
| **starTable表**  "star\_id",StringType  "ccd\_num",IntegerType  "imageid",IntegerType  "zone",IntegerType  "ra",DoubleType  "dec",DoubleType  "mag",DoubleType  "x\_pix",DoubleType  "y\_pix",DoubleType  "ra\_err",DoubleType  "dec\_err",DoubleType  "x",DoubleType  "y",DoubleType  "z",DoubleType  "flux",DoubleType  "flux\_err",DoubleType  "normmag",DoubleType  "flag",DoubleType  "background",DoubleType  "threshold",DoubleType  "mag\_err",DoubleType  "ellipticity",DoubleType  "class\_star",DoubleType  "orig\_catid",IntegerType  "timestamp",IntegerType | **template表**  "star\_id",StringType  "ccd\_num",IntegerType  "zone",IntegerType  "ra",DoubleType  "dec",DoubleType  "mag",DoubleType  "x\_pix",DoubleType  "y\_pix",DoubleType  "ra\_err",DoubleType  "dec\_err",DoubleType  "x",DoubleType  "y",DoubleType  "z",DoubleType  "flux",DoubleType  "flux\_err",DoubleType  "normmag",DoubleType  "flag",DoubleType  "background",DoubleType  "threshold",DoubleType  "mag\_err",DoubleType  "ellipticity",DoubleType  "class\_star",DoubleType |

## 查询

查询1：查询某个星的在某个时间范围的光变曲线返回光变曲线和时间戳

SELECT mag,timestamp

FROM starTable

WHERE star\_id = $starID and timestamp >$timeMin and timestamp<$timeMax

查询2：按星等查询：查询星等值在某个范围内[magMin,magMax]的所有目标，返回星id

SELECT star\_id

FROM template

WHERE mag >$magMin AND mag<$magMax

查询3：按位置区域查询：按赤经、赤纬，一定的搜索半径来查询该区域内的目标,返回星id

SELECT star\_id

FROM template

WHERE 180/3.1415926\*3600\*acos( sin(radians(dec))\*sin(radians($decTemp))+cos(radians(dec))\*cos(radians($decTemp))\*cos(radians(ra)- radians($raTemp))) <$searchRadius

查询4：按目标ID所在区域查询该ID对应的目标的周围一定半径内的星id

SELECT star\_id

FROM template, (SELECT ra, dec

FROM template

WHERE star\_id="$starID") as rd

WHERE star\_id <> "$starID" AND 180/3.1415926\*3600\*acos( sin(radians(dec))\*sin(radians(rd.dec))+cos(radians(dec))\*cos(radians(rd.dec))\*cos(radians(ra)- radians(rd.ra))) <$searchRadius

查询5：按位置区域查询：按赤经、赤纬，一定的搜索半径和一定时间范围来查询该区域内的所有目标的光变曲线和时间戳

SELECT star\_id,mag,timestamp

FROM starTable,template

WHERE 180/3.1415926\*3600\*acos( sin(radians(template.dec))\*sin(radians($dec))+cos(radians(template.dec))\*cos(radians($dec))\*cos(radians(template.ra)- radians($ra))) <$searchRadius AND template.star\_id = starTable. star\_id

查询6：按目标ID所在区域查询该ID对应的目标的周围一定半径和一定时间范围内的星的光变曲线和时间戳

SELECT star\_id,mag,timestamp

FROM starTable,template, (SELECT ra, dec

FROM template

WHERE star\_id="$starID") as rd

WHERE template.tar\_id <> "$starID" AND 180/3.1415926\*3600\*acos( sin(radians(template.dec))\*sin(radians(rd.dec))+cos(radians(template.dec))\*cos(radians(rd.dec))\*cos(radians(template.ra)- radians(rd.ra))) <$searchRadius AND template.star\_id = starTable. star\_id

查询7：查询某视场的星ID

SELECT star\_id

FROM template

WHERE ccd\_num = $ccd

查询8：按位置查询，查询一个天区范围内ra∈[ra1,ra2],dec∈[dec1,dec2]的所有星，返回星的所有信息

SELECT \*

FROM template

WHERE ra>ra1 and ra<ra2 and dec>dec1 and dec<dec2

查询9：按类别查询：查询特定类别(class\_star=$starClass)的所有星，返回星的所有信息

SELECT \*

FROM template

WHERE class\_star=$starClass

查询10：按类别统计，统计总数

SELECT count(template\_id)

FROM template

Group by class\_star

查询11：按位置查询，查询不在一个天区范围内ra∈[ra1,ra2],dec∈[dec1,dec2]的所有星，返回星的所有信息

SELECT \*

FROM template

WHERE ra<ra1 and ra>ra2 and dec<dec1 and dec>dec2

查询12：查询某个星的不在某个时间范围的光变曲线返回光变曲线和时间戳

SELECT mag,timestamp

FROM starTable

WHERE star\_id = $starID and timestamp <$timeMin and timestamp>$timeMax

查询13：按星等查询：查询星等值不在某个范围内[magMin,magMax]的所有目标，返回星id

SELECT star\_id

FROM template

WHERE mag <$magMin AND mag>$magMax

查询14：按目标ID所在区域查询该ID对应的目标的周围一定半径外的星id

SELECT star\_id

FROM template, (SELECT ra, dec

FROM template

WHERE star\_id="$starID") as rd

WHERE star\_id <> "$starID" AND 180/3.1415926\*3600\*acos( sin(radians(dec))\*sin(radians(rd.dec))+cos(radians(dec))\*cos(radians(rd.dec))\*cos(radians(ra)- radians(rd.ra))) >$searchRadius

查询15：按位置区域查询：按赤经、赤纬，一定的搜索半径来查询该区域外的目标,返回星id

SELECT star\_id

FROM template

WHERE 180/3.1415926\*3600\*acos( sin(radians(dec))\*sin(radians($decTemp))+cos(radians(dec))\*cos(radians($decTemp))\*cos(radians(ra)- radians($raTemp))) >$searchRadius

查询16：查询某个CCD的星个数

SELECT count(\*)

FROM template

WHERE ccd\_num=$ccd

查询17：查询某个星在某个时间范围的最大亮度

SELECT max(mag)

FROM starTable

WHERE tar\_id = $starID and timestamp >$timeMin and timestamp<$timeMax

查询18：查询某个星在某个时间范围的最小亮度

SELECT min(mag)

FROM starTable

WHERE tar\_id = $starID and timestamp >$timeMin and timestamp<$timeMax

查询19：查询查询某个星集合的光变曲线

SELECT star\_id, mag,timestamp

FROM starTable

WHERE star\_id in ($starSet) and timestamp >$timeMin and timestamp<$timeMax

sort by star\_id, timestamp