





















LIGHT POLLUTION MONITORING PROGRAM ORGAN PIPE CACTUS NATIONAL MONUMENT

BACKGROUND: ORGAN PIPE CACTUS NATIONAL MONUMENT HAS, OVER THE YEARS, GAINED THE DISTINCTION AMONG SOME CIRCLES AS HAVING ONE OF THE CLEANEST AND CLEANEST OF NIGHT SKIES FOR AMATEUR ASTRONOMERS, STAR GAZERS AND VISITORS WHO SIMPLY ENJOY STAR-FILLED DESERT NIGHTS. A NUMBER OF REFERENCES TO THIS DARK SKY QUALITY OF THE MONUMENT HAVE BEEN MADE IN POPULAR ARTICLES IN SKY WATCHING AND LEISURE/RECREATION MAGAZINES. THESE ARTICLES WILL BE APPENDED AS THEY BECOME AVAILABLE.

DURING THE OFF-SEASON OF 1985 (LATE-SPRING, SUMMER AND FALL) THE RURAL FARMING AREAS OUTSIDE OF SONOYA, MEXICO (WHICH INCLUDES ~~THE~~ THE DEVELOPED CORRIDOR TO THE LUKEVILLE PART-OF-ENTRY) FIRST RECEIVED DISTRIBUTED ELECTRIC POWER. THIS WAS A BOOST TO LOCAL DEVELOPMENT SINCE THESE FARMS RELY ON WELL WATER FOR CROP IRRIGATION AND HAD BEEN USING COSTLY DIESEL POWER FOR PUMPING. WITH THE CONVERSION TO ELECTRIC PUMPS THE FARMERS SAVED MONEY. ABOUT THE SAME TIME HOWEVER, ELECTRIFICATION OF THE FARMERS' HOUSES WAS FIRST NOTICED FROM ORGAN PIPE CACTUS NATIONAL MONUMENT AS NEW LIGHT COMING FROM WHAT HAD BEEN A DARK VALLEY. THE 1985-1986 WINTER VISITOR SEASON WAS THE FIRST TIME THIS NEW LIGHT POLLUTION WAS NOTICABLE AT THE MAIN CAMPGROUND. THIS WAS ALSO THE WINTER AND SPRING OF HALLEY'S COMET WHICH MADE LIGHT POLLUTION MORE OF A CONCERN AT THE CAMPGROUND. THE MOST NOTABLE NEW LIGHT POLLUTION COMING FROM MEXICO IS FROM THE AREA NEAR EJIDO LOPEZ MATED, JUST ACROSS THE BORDER FROM GACHADO LINE CAMP.

PURPOSE: THIS MONITORING PROGRAM IS INTENDED TO RECORD THE DEVELOPMENT OF LIGHT POLLUTION, COMING FROM MEXICO AND LUKEVILLE, ARIZONA TO THE MAIN CAMPGROUND WHICH IS THE MAIN AREA OF LIGHT POLLUTION IMPACT UPON VISITORS SEEKING A "PARK EXPERIENCE" — AN UNPOLLUTED EXPERIENCE.

PROCEDURE: ON AN ANNUAL BASIS, ^{REPEAT} PHOTOGRAPHS SHOULD BE TAKEN FROM A FIXED POINT NEAR THE MAIN CAMPGROUND. PHOTOS SHOULD BE TAKEN DURING THE BUSY VISITOR SEASON. A 50MM LENSE SHOULD BE USED ON A 35MM CAMERA MOUNTED ON A TRIPOD.

PHOTO POINT: MAIN MONUMENT CAMPGROUND, SOUTH END, NEAR THE SEWAGE DUMP STATION, EAST OF THE DUMPSTATION NEAR THE SECOND WATER FAUCET, WITH THE TRIPOD PLACED AT THE EDGE OF THE PERIMETER TRAIL, EAST OF THE SECOND CREOSOTE BUSH, EAST OF THE LARGE CHRUTHAS CACTUS WHICH IS UNDER AN ACACIA BUSH.

HISTORY: THE FIRST YEAR'S PHOTOGRAPHS WERE TAKEN BY PARK VOLUNTEER RUTH FREDRICK IN 1986.

ON 14 MARCH 1986 SIX COLOR SLIDES WERE TAKEN. FUGICHROME FILM WAS USED, ASA 100, AT 6:30 TO 7:30 P.M.

SLIDE No. 28: RIGHT VIEW AT DUSK.

SLIDE No. 29: LEFT VIEW AT DUSK.

SLIDE No. 30: RIGHT VIEW, 20 SECONDS.

SLIDE No. 31: RIGHT VIEW, 10 SECONDS.

SLIDE No. 33 LEFT VIEW, 10 SECONDS.

SLIDE No. 34 CENTER VIEW, 10 SECONDS.

Sonoyta Valley Lights

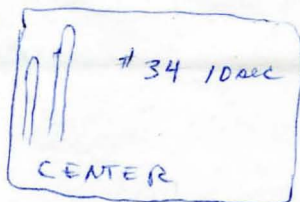
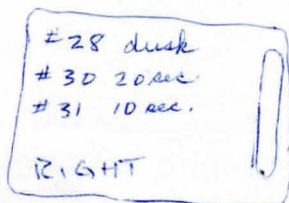
3/14/86

lens: 50mm w/ UVhaze filter

film: fujiichrome ASA100

location: Park at 2nd water faucet
east of ~~park~~ sewer dump. There is a
pullout on the right.

Tripod is at edge of perimeter trail, east
of the 2nd creosote bush east of large
Christmas Cactus under ~~Acacia~~ ^{ironwood} ~~tree~~ bush.



~~#28~~

Time: 6:30 - 7:30 PM

Taken by Ruth Fredrick

Annual Light monitoring of Sonoyta Valley 50mm lens

11 Mar 87

Daytime print photos were taken in order to identify the photo points from which to do the monitoring. There are 2 possible sites: One is at south end of campground east of dump station. The other is the pull-out on north side of road at top of hill just before entering campground. Photos are included from both sites this year. One site will probably be discontinued after this year's photos.

Daylight

- 1) Prints using Kodacolor VR-100 film in R.M.'s MX Pentax for prints:
a. Exp. # 3, 4, 11, 12 + 13 were taken at pullout on road to campground.

- ? # 3, looking south from pullout
4, facing parking location from so. side of road at pullout
11, right hand view of valley facing south
12, center view of valley facing south
13, left view of valley facing south

- b. exposures # 5, 6, 7, 8, 9, 10 were taken at campground site: Park at narrow pullout at 2nd water faucet east of dump station. Walking south to perimeter trail you will see a grouping of a young ironwood tree, a christmas cactus + a cholla. Place tripod at trail about 18 feet east of this grouping.

- # 5. Car parked at 2nd water faucet east of dump station facing north
6. The grouping of ironwood, christmas cactus + cholla.
7. Right hand view of valley facing south
8. Center view of valley facing south
9. Left view of valley facing south
10. View of parking area facing south

from $\approx 18'$ east of plants in #6

- 2) Slides (at dusk and dark) Kodachrome 64 in R.M.'s MX Pentax for slides:

- # 8 - right view, dusk, $\frac{1}{4}$ sec.
9 - left view, dusk, $\frac{1}{4}$ sec.
10 - left view, dusk, self timer
11 - right view, some skyline 10 sec
12 - left view, some skyline 10 sec

6:30 PM

7:03 PM

from pullout on road

over

this location not to be maintained

#13 right view, dark skyline 20 sec. }
 #14 left view, dark skyline 20 sec. } 7:13 PM from pull out on ⁸² road
 #15 right view, dark skyline 20 sec. }
 #16 left view, dark skyline 20 sec. } 7:25 PM from dump station _{site}

~~Figure 47~~

Note: there was some ground haze not observed last year.
 There was bright moonlight.











